known forms of organic development, and the slightest approach to putrefactive change, had been alike prevented by simply filtering the air of its floating molecules.

Yet the urine, which had so long remained unaltered under the free influence of the gaseous constituents of the atmosphere, proved as prone as ever to the usual effects of exposure to the air, as soon as particles of dust could gain access to it; for, the wineglass having been covered to prevent evaporation, I found the fluid in two days with a dunghill odour, and loaded with minute microscopic organisms; and, a few days later, different kinds of fungi, visible to the naked eye, were growing in it.

Gentlemen, I commend these facts to your candid and impartial judgment, beseeching you to form your own opinions regarding them. The minds which you bring to bear upon this subject to-day are very much the same as they will be throughout your lives. An observation which any one of you may make now will serve in after-life to illustrate a course of lectures, should he occupy a position corresponding to that which I have now the honour to hold; and you are as competent as you ever will be to draw logical inferences from established data. Do not, then, let any authority shake your confidence in knowledge so obtained.

Throughout the course on which we are entering, I shall endeavour as far as possible to place before you simple facts, trusting that, in estimating their significance, you will be ever guided by that which our dear master has so constantly striven to inculcate as our leading principle—the love of Truth.

NOTES

ON

ALPINE SUMMER QUARTERS FOR INVALIDS IN 1869.*

By CHARLES J. B. WILLIAMS, M.D., F.R.S.

It must be confessed that this first view of the Baths of Bormio from below is too wild and desolate to be beautiful; but, as the Stelvio road emerges from the narrow streets of the ugly town, and ascends the gentle slope to the baths, the scene all brightens; and, when we reached the terraced gardens of the building, and, turning our backs on the frowning Stelvio, looked in front over the green fields to the valley and gorge that we had left, now in the azure distance, with its varied mountains towering above it, some wooded, some barren, and most of them capped with snow—then another beautiful valley, with its vista of mountains lying to the left; and withal, for a foreground, a garden glowing with grouped flowers of brilliant colours,—we were constrained to admit that we had surveyed few scenes more lovely in the lands which we had left behind us. Thus were removed our first misgivings as to the beauty of the place.

But next as to its salubrity. The establishment of the New Baths is a modern building, placed on a hill sloping up to the perpendicular cliffs before mentioned, which are the terminal buttresses of Monte Cristallo, the highest of the two mountains between which the Stelvio road is carried. This hill is formed of the *débris* of the limestone rock fallen from the cliffs, and is consequently dry and stony, with large masses of rock scattered here and there over it. A thin soil, with mountain herbage and scattered shrubs, partially cover it; and this has been further improved by artificial planting and a variety of walks and seats for the benefit of the inmates of the establishment. The building faces the south, looking down the Val di Sotto or Upper Valtelline. Behind, the rocky cliffs of the Stelvio form a complete screen to the north and east. To the right is the valley of Pedenos, running westwards, and leading to the Vals Viola and Livigno, through which it is possible to make short cuts to the Bernina road. To the left, beyond a projecting spur from the Stelvio mountain, lies the valley of Furva, which runs up to Santa Caterina, another watering-place, to be noticed hereafter.

The new baths of Bormio are, therefore, favourably placed for dryness, sunny aspect, shelter from the winds of the north and east; and yet derive coolness from the altitude, and from the breezes which frequently blow from the west and from the south. No doubt, the heat of the sun is great in summer; and there is a want of tree-shade near the establishment. But the detached rocks afford shelter; and there are always portions of the Stelvio road in the shade, as it winds

through the ravine behind the old baths. On the opposite hill, also, are extensive pine-woods, in which shady walks may be found.

The meteorological observations collected by Dr. C. G. Brügger give a favourable view of the temperature of the Bormio baths. The mean annual temperature is 44.51 deg. F., which is from two to four degrees warmer than any place of the same altitude in Switzerland. The moderateness of the temperature at different seasons is further proved by these figures:—

Temperature of the Air at Bormio (New Baths).

	MAX.	MIN.	MEAN.
Summer	F. 80 deg.	41 deg.	61.7 deg.
Autumn	73.2	18.5	43.16
Winter	—	—	31.6
Spring	70	21	42

The mean humidity of the air at Bormio in the three summer months is 68 deg. (saturation being 100 deg.) By way of comparison, may be mentioned that of Berne (75.7 deg.), and those of Zurich (79.8 deg.) and Montreux (80 deg.)

These figures correspond pretty well with the indications of our sensations during our sojourn. The air was never either oppressive or too cold to be pleasant. The sun's rays, of course, had great power; but there was almost always a cooling breeze, which was refreshing, without the extremes of scorch and chill from which we had suffered in the Engadine.

The airiness and dryness of the situation may be ascribed partly to its absolute height (which I found 4,560 feet above the sea; Ball states, 4,798), and partly to the declivity falling from it—on the west, abruptly into the ravine down which dashes the torrent of the Adda; and on the south, by a more undulating slope, into the Bormio valley; while behind, to the north and east, it is protected from the colder winds by the Stelvio mountains. It may be said to stand in an amphitheatre of mountains; but those in front are more distant, so that they shut out the morning and evening sun less than in the Engadine; whilst those behind are so near and so high as effectually to shut out the cold blast from the north. Hence the thermometer, in the coldest months, falls only a few degrees below freezing; whereas at St. Moritz it sometimes is down to—18 deg. F., or fifty degrees below freezing. The occurrence of frost at night during the summer months, which we had experienced in the Engadine, is never thought of at Bormio. In fact, the growth of gourds, and of several other tender plants, in the open gardens of the establishment, proves how much more genial is the climate than that of the upper Engadine, where even potatoes and common garden-stuff cannot be raised.

On comparing Bormio with other places, with regard to the amount of rain and the number of rainy days in the year, it appears from Dr. Brügger's tables to be much below the average; the number of rainy days in the summer (June, July, August), during five years, averaging twenty-three; whilst at Zurich it was thirty-two; at Berne, forty-five; Zermatt, thirty-eight; Remis (Unter-Engadin), forty-two; Gastein (Tyrol), forty-three; Tegernsee (Bavaria), fifty-two. In predominance of fine weather, therefore, Bormio resembles Italy more than Switzerland. Possibly the paucity of trees in the immediate neighbourhood may be a cause of this greater exemption from rain and cloud. I was struck with the difference between this place and Switzerland generally, in the prevalent prognostic as to the weather. In Switzerland, it is commonly doubtful or gloomy. At Bormio, in spite of occasional gathering clouds and falling rain, the general assurance was, "It will soon be fine again;" and so it proved.

The establishment of the Bagni Nuovi is under the management of an intelligent Swiss, who speaks English, and is a most attentive host. It contains one hundred and forty bedrooms, plainly but comfortably furnished; and there are the *salles à manger, salon de société, salle de lecture*, billiard-room, etc., usually found in large continental hotels. There are forty bathing-rooms, with baths, some of marble, some of wood; and appliances for douches of different kinds; and a few are appropriated to collect the muddy deposit from the waters (fanghi)—a disgusting-looking slimy matter, redolent of sulphuretted hydrogen, supposed to be effectual as a discutient for tumours and rheumatic swellings.

It is foreign to my purpose to describe the waters and their uses, and I must refer to the pamphlet of Dr. G. Fedeli, the intelligent physician residing in the establishment; and to that of Drs. Meyer-Ahrens and Brügger, before mentioned. I may merely state that the thermal waters gush in great abundance from several sources in the tufa deposits at the foot of the Stelvio mountain. These may be explored half a mile above the new baths, at the Bagni Vecchi, a smaller and still more economical establishment. The temperature of the springs here is as high as 106 deg. F. At the Bagni Nuovi, to which it is conveyed in pipes, I did not find it higher than 98 deg. F. The chief

* Concluded from page 578 of last number.

mineral ingredients in the waters are sulphates of lime, magnesia, and soda, with very little iron and sulphur. The mud, however, which is deposited from the Archduchess Spring, is rich in filaments of sulphur, and in sulphuretted hydrogen, besides ochreous and saline matters. There is also a very drinkable cold chalybeate spring just below the old baths, not unlike that of St. Moritz, but less brisk with carbonic acid. It is much recommended for the weaker patients who are using the baths.

The establishment of the new baths is open from the middle of June to the end of September; but, if the advantages of the situation for purity and dryness of air—its sunny aspect, yet airiness—its coolness, without bleakness—were more known, its season would probably be lengthened, and part of the establishment kept open through the winter.

There are many delightful excursions in the neighbourhood deserving of notice; but the limits of this communication will allow me to mention only that to Santa Caterina, another hotel or health-establishment, with accommodation for fifty inmates. There are only two or three baths; but the attraction is a noted chalybeate spring. It seemed to me too strong to be taken without dilution; but it is bottled to a great extent, and is much used as an addition to wine or to other waters. The distance is about ten miles from Bormio, up the beautifully wooded glen, Val Furva. Although St. Caterina stands at a height of 6,000 feet—as high as St. Moritz—there is in this glen leading to it a much greater variety of trees than in the upper Engadine. But, as at St. Moritz, the mineral spring rises out of a bog; and, as you walk to it, the path yields with singular elasticity under your feet. This swampy ground forms the bottom of the valley, which is closely hemmed in by lofty mountains on all sides, except to the west, where it leads down the Val Furva towards Bormio; and to the north-east, where it is open to the ice-bound Val Forno, surrounded with the snow-peaks and glaciers of Monte Cevedale, Zufal-Spitz, Monte Tresero, and others. However advantageous this situation may be for scenery and mountain-climbing, it is obviously not a suitable residence for invalids, or for any persons likely to suffer from cold and damp.

Besides the route which we took to Bormio over the Bernina pass, there is another down the Engadine to Martinsbruck, and by the Etschthal over the Stelvio pass, the highest and grandest of all the carriage-passes over the Alps. Or the Stelvio may be reached from Innsbruck by the Brenner railway to Botzen, and up by Meran and the lower part of the picturesque Etschthal. From the Italian side, it is possible to go from Varenna or Bellagio on the Lake Como to Bormio, in a long summer's day; but the journey is generally divided by sleeping at Sondrio, which is the least unhealthy of the towns in the beautiful but dangerous lower Valtellina, in which it is not expedient to linger even for a day.

Although the new baths of Bormio appear to me to offer more advantages in point of dryness, shelter, and comfort, than any of the other high mountain resorts in the Alps; yet several of these deserve mention, as affording good accommodation, and being entitled at least to compete with the Engadine as summer-quarters.

The Hotel Rigi Kaltbad (4,727 feet) is on the south-west of the Rigi, and thus sheltered from the coldest winds. The Hotel Rigi Scheideck (5,406) is on the south-east of the mountain, less sheltered, but is quiet, with more scope for promenade, and well supplied with milk and whey. The great objection to the Rigi hotels are, the frequent occurrence of bad weather, and their inaccessibility by carriage. At Combazz (4,417), above Aigle, and in the same vicinity at Sepey and Ormont Dessus, under the Diablerets mountains, are several sanitary hotels, which are much frequented in the summer, for the sake of their pure air and fine wild scenery.

Leukerbad, under the Gemmi pass, stands at a height of 4,642 feet, with a southern aspect, and by its great mountain-screen to the north and east, is fairly protected from extreme cold. It is accessible by a good carriage-road from the Rhone Valley, and has good hotel accommodation.

Courmayeur, on the Italian side of Mont Blanc, stands at a height of about 4,000 feet, with two large hotels; but it is too close to the Brera glacier and the great snow-fields of the Géant to be safe from sudden chills.

At Gressoney St. John, in the Val de Lys, is Delapierre's very comfortable hotel, at a height of nearly 5,000 feet, in a beautiful Alpine valley, with the Lyskamm at its upper end; but the splendid snow-mountain which is its pride might send down its bleak blast at times, to the detriment of the delicate. The valley at present is not accessible to carriages.

There is a good hotel on Monte Generoso, between the lakes of Como and Lugano, which may prove a good summer residence. The summit is 5,561 feet. This also is accessible only on foot or on horseback.

There are also two good summer places in the Maritime Alps, mentioned by my son in his last edition,* well adapted for invalids. One is St. D'Almas de Tende, fifty miles from Nice, on the road to Turin. It stands at a height of 3,000 feet, and is well sheltered from the north. The other is Certosa di Pesio, two days' journey north of Oneglio, on the Riviera, at the altitude of 5,000 feet, with a hydropathic establishment, and accommodation for one hundred guests.

THE TREATMENT OF SYPHILIS BY THE HYPODERMIC INJECTION OF THE SALTS OF MERCURY.†

BY THOMAS JAMES WALKER, M.D. LOND.,
Surgeon to the Peterborough Infirmary, etc.

SINCE the publication of the first part of this paper in the JOURNAL for July 10th, M. Liégeois has brought before the French Société de Chirurgie the results of his experience of the treatment of syphilis by hypodermic injections. The strength of the solution employed by him is only 1 in 500; and, in consequence of his observations of the advantages which this weaker solution has over the stronger one, I have latterly injected one-thirtieth of a grain of the bichloride dissolved in ten drops of water and glycerine, instead of one-tenth of a grain, as recommended in the former part of this paper; and the weaker injection I use daily instead of every third day. The pain and inflammation at the seat of puncture are much less with the weaker solution; and, though I am not at present in a position to say whether the smaller dose is equally effectual, I should recommend its trial.

Of the various cases of secondary syphilis which came under my care during the last three months of the past year, thirteen were subjected to the treatment by the hypodermic injection of the bichloride of mercury; and, in order that a fair estimate of the value of the remedy may be arrived at, I do not pass over even those cases in which, from various circumstances, this treatment was not persevered with.

I now give abstracts of the records of the cases from my notes. The reports of most of the cases which have occurred in dispensary practice, are furnished by Mr. Lloyd, House-Surgeon to the Peterborough Infirmary.

CASE I.—A female, aged 30, wife of a hawker, of robust frame, but emaciated and cachectic looking, was admitted to the Peterborough Infirmary on September 1st, 1868. She stated that, seven months previously, she first noticed copper-coloured blotches over the body and the labia. She was at that time an out-patient of the Dispensary, and was treated with fifteen-grain doses of iodide of potassium; she continued under treatment for three months, and then ceased to attend. On admission, she presented large copper-coloured maculae over the legs, arms, and labia; there were also superficial ulcers on various parts of the body, general induration of the glands, and condylomata (mucous papules) about the pudenda. She had had ulcerated throat, but was not then suffering from it.

On September 3rd, one tenth of a grain of bichloride of mercury was injected under the skin of the anterior surface of the right thigh. Next day, she complained of aching at the seat of the injection, and said that she suffered pain in walking. There was neither swelling nor inflammatory redness. During the succeeding night, a slight blush appeared at the seat of injection, but was disappearing when she was seen on the 5th. The pain was then less. A tenth of a grain of bichloride was injected under the skin of the left thigh. This second injection caused the same local effects as the first. On the 8th, the rash had diminished considerably. A third injection, of the same quantity, was made under the skin of the fore-arm. Next day, there were pain, swelling, and slight redness at the seat of the last injection. On the 12th, a fourth injection was made, under the skin of the left buttock, close to a group of condylomata. This injection caused little discomfort. The blotches were disappearing from all parts with astonishing rapidity. Her health was much improved. On the 15th, she was so much improved that she wished to leave the hospital. Another injection was made over the right buttock. The injection was repeated on the 19th and 22nd. On the latter day, she was much better in all respects, the rash having almost entirely disappeared. She then neglected to attend for thirteen days, during which time she was not injected; and when she was seen on October 7th, a few fresh spots of eruption had come out, and the condylomata had not disappeared. An eighth injection was made. The patient now left the town; and the treatment was discontinued. About three months later, she shewed herself as she was passing through

* *The Climate of the South of France*, etc. By Charles Theodore Williams, M.D. 1869.

† Continued from page 31 of number for July 10th.