THE PORT FOLIO,

NEW SERIES,

CONDUCTED BY JOSEPH DENNIE, ESQ.

Various; that the mind
Of desultory man, studious of change
And pleas'd with novelty, may be indulged.
COWPER.

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FOR THE PORT FOLIO.—BRISTOL SPRINGS.

THE town of Bristol, romantically situated on one of the most verdant margins of the Delaware, is one of those enchanting spots in the bosom of nature, on which the philosopher, the lover, the studious and the social, with equal rapture repose. Separated from Burlington on the Jersey side, the eye of the painter, the poet, and the enthusiast is at once refreshed and recreated by all the sylvan honours of Bristol. Among its rural joys, at this enchanting season, the liberal establishment which the taste and judgment of Dr. Minnick have conspired to enhance in the estimation of the man of pleasure, or the victim of disease, may be justly enumerated. The mineral spring, which the analysis of science has demonstrated so salutary to many a sufferer; the sporting country in the vicinage, so gladsome to the robust hunter, or the patient fisherman; the variegated landscape, the aliment of the naturalist; the bird's eye view of Burlington, the delight of every traveller, every scholar, and every friend, all unite to convince him, whose soul is corroded by the cares of a crowded city, that here, at least for a season, something like contentment, some-

FOR THE PORT FOLIO.

BEDFORD MEDICINAL SPRINGS.

Continui montes, nisi dissocientur opaca
Valle; sed ut veniens dextrum latus aspiciat Sol,
Lævum discedens curru fugiente vaporet.
Temperiem laudes, ——— ———
Dicas adductum propiùs frondere Tarentum.
Fons etiam rivo dare nomen idoneus, ut nec
Frigidior Thracam nec purior ambiat Hebrus,
Infirmo capiti fluit utilis, utilis alvo.
Hæ latebræ dulces, etiam (si credis) amœnæ. *Horace.*

The town of Bedford, in the neighbourhood of which those springs have their source, and from which they receive their name, is situate on the great Pennsylvania-road, leading from Philadelphia to Pittsburgh, two hundred miles from the former, and one hundred from the latter. The site of the town is healthful and beautiful beyond description. Built upon an eminence formed of limestone and silex, it is always clean. Almost enveloped with mountains, which pour their limpid streams into the vallies, and which are deeply shaded by forest-trees, the inhabitants of this village enjoy delightful summers: never incommoded by heat, they are refreshed by pure and cooling breezes, which either play on the hill, or sport in the dale.

West of the town, is Will's mountain, which begins a little north of Bedford, and runs a few degrees to the west of south. Its altitude is more than thirteen hundred feet. On the east is Dunning's mountain, which runs parallel to Will's mountain and is eleven hundred feet in height. These ranges of mountains are about one mile and a half distant from each other at their bases. The numerous fountains to which those ridges give birth, generally discharge waters remarkably pure and transparent; but not so very cold as might be expected, in so deep and narrow a valley. It is well known that the air, *cæteris paribus*, in those regions, where the forests have not been disturbed, is purer than in those, where they have been partially tamed by the hand of cultivation, an advantage which the atmosphere around these springs possesses; and for ages to come,

it must continue to be richly supplied with oxygen, or vital air, from the extensive forests which cover the surrounding mountains. The summers in these regions, especially in the mornings and evenings, are cooler, than they are either east or west on the same latitude. A large volume of air along the western side of Dunning's mountain, not heated by the rays of the morning sun before ten o'clock: a similar volume along the eastern side of Will's mountain, begins to cool two hours before night: hence the heat is never intense—cool breezes generally prevail. The mercury in Fahrenheit's thermometer rarely rose, in June, 1810, above 65° at 8 o'clock, A. M.: July of the same year, was but a few degrees warmer, and in August, the mercury did not often rise to 80° before noon, in the shade.

The mountain scenery around Bedford, though picturesque, stately, and possessing much to charm the eye of the beholder, is not remarkably grand, or magnificent. One mile and a half south of the town, in a charming and romantic valley, are the MINERAL SPRINGS. This valley is formed by a spur of Dunning's mountain, and a ridge running nearly parallel to Will's mountain. The spring most celebrated and improved, arises from the base of the mountain, on the south-east side of the valley. It has a north-west exposure.

In the year 1804, a mechanic of Bedford, when fishing for trout in the stream which runs near the mineral fountain, had his attention drawn by the beauty and singularity of the waters flowing from the bank, and drank freely of them. They operated as a purgative and sudorific. This man had been distressed for many years with rheumatic pains, and formidable ulcers on his legs. On the ensuing night he was much less disturbed with pains, and slept more tranquilly than usual. The unexpected relief obtained, induced him to drink of the waters daily, and bathe his legs in the running fountain. In a few weeks he was perfectly cured. The happy effect which they had on this patient, induced others labouring under this, and various chronic diseases, to visit these springs. On the summer of 1805, a great number of valetudinarians, came in carriages, and encamped in the valley, to seek, from the munificent hand of Nature, their lost health. A dense copse of shrubs, had enveloped the springs until about

this time, and rendered it difficult to approach them. The inhabitants of Bedford, now began to make improvements. Upon digging away the bank, it was found, that about twenty feet from the spot where the waters first issued, they poured themselves through the fissure of a limestone-rock. This limestone-stratum, lies nearly parallel with the surface of the mountain, of which it forms a part; making with the horizon, an angle of about 35°; and is covered with a mixture of clay and freestone gravel, about three feet in depth.

About fifteen perches south of this, there is another mineral spring, which discharged on the 16th of last March, six gallons of water per minute; the sensible qualities of which differ but little from those of the other. At present it rises sixty feet from the base of the mountain. It once rose twenty-five feet higher on the hill than at present. Between its original source and the bottom of the hill, there is a large bank, manifestly of secondary formation. It would seem that from the first ages of the world to the present time, this bank has been forming by deposite from the stream. It is highly probable that, at some distant period, a much larger quantity of water escaped from the mountain at this place; that, by its own deposite, the channel was partly blocked up; and that the waters which originally burst out here, found a new passage, through the fissure of the limestone-rock, mentioned above. There are many hundred tons of this deposite. Its colour is grayish, and it is easily pulverized. With the stronger acids, it effervesces violently; and there is a copious evolation of fixed air. Its composition, however, has not yet been perfectly ascertained.

About forty perches north-east of the principal fountain, at the base of the same mountain, is a rich SULPHUR SPRING, which, hitherto, has been covered by the waters of the creek, in the bed of which it rises. It is expected, that this spring will be improved before the warm season of the ensuing summer. There are also in the same valley, copious fountains of cool and beautiful waters, which are not distinguished by any peculiarity of mineral quality.

The spring which has chiefly engaged the attention of the public, and which is more highly improved, discharged on

the 16th of March last, twenty gallons of water per minute; the temperature of which by Fahrenheit is 55°. It emits no smell when issuing from the fountain; is perfectly transparent, and its taste is very soft, but agreeable to most palates. When exposed in a clear glass vessel, there is seen floating in it, a pellucid mineral substance, which, after standing a few days, is solved, so as to become invisible. It deposites in the troughs, which convey it to the baths, a large quantity of oxydized iron. A glass tumbler exposed to the water in the fountain two weeks, was found to be enveloped in a coat of oxyde of iron. The presence of iron is also detected by tincture of galls, with which it strikes a black colour. After being heated to 212° of Fahrenheit, no change is produced in its colour by the tincture; indicating the solvent of the iron, to be sulphuric acid.

A few grains of pure vegetable alkali, added to one half pint of the water, changes it to nearly the whiteness of milk. The white particles which produce this colour, in one hour fall to the bottom; and when filtrated and dried, there remains a white powder, slightly caustic. Two ounces of alcohol added to the same quantity of the water, precipitated, in one hour, every mineral substance, which it contains. When this precipitate was filtrated and dried, there remained a gray powder, the taste of which was similar to that of an equal mixture of phosphate of soda and magnesia. Tincture of galls added to the water, after it had been heated to the boiling point, did not, as was remarked, strike a black colour. Muriatic acid was now added, the temperature still 212°, which produced no visible change; but, upon adding a few grains of pure vegetable alkali, a violent ebullition succeeded,—white fumes arose—a highly offensive smell was emitted—and a copious precipitate immediately fell down. The unpleasant smell resembled that of sulphuretted hydrogen. The precipitate was not analyzed, so as to ascertain its composition.

Three pints of the water were reduced, by slow evaporation, to a half pint: and a solution of carbonate of ammonia, which had been prepared by the exposure of pure ammonia to the action of the atmosphere, was added to the water thus reduced, which became turbid; and a solution of phosphate of soda was now

presented to it, and a copious precipitate fell down, indicating magnesia.

From these few, with some other experiments, the presence of a salt of iron, by sulphuric acid of sulphur, perhaps of sulphuretted hydrogen, and the carbonates of magnesia, and lime, have been detected. The sulphate of iron is in small quantity—The proportion of carbonate of lime, very small—That of carbonate of magnesia, great. Alumine is believed to be contained in them also.

During the warm season of several years past, many hundreds of people have resorted to these springs, in quest of lost health, sought in vain from the skill of the physician. From their recent discovery, little was known of the extent of their influence upon disease, except from casual observation, and the reports of their visitants, until last season; when a regular plan was adopted to ascertain, with precision, how far their effects may be depended on. It has been found by impartial observation, made with as much care as circumstances permitted, that they have a salutary effect in destroying the various species of intestinal worms in children and adults—in removing incipient consumptions of the lungs, or checking a tendency to that disease—in removing chronic obstructions and inflammations of the viscera, particularly of the liver; especially those which follow autumnal fevers, and protracted intermittents. Indeed they have been effectual, in either curing or retarding, all cases of deranged excitement of the viscera, consequent on bilious fever, remittent, or intermittent; whether in their acute or chronic states.

Dyspepsia—constipated bowels from torpid liver—incipient dropsies—calculus—diabetes—chronic nephrites—hemorrhoids—rheumatisms—cutaneous eruptions—ulcers, in which the system has been brought to sympathise, or which follow systematic disorders—partial paralysis—the obstructions and profluvia, which too often afflict females,—are diseases, in which these waters have been found to possess the most salutary healing virtues. Good effects are experienced in almost all cases of debility, whatever their cause, which not unfrequently baffle the physician, and from year to year teaze the patient.

At first view it may appear astonishing, that this mineral fountain should be possessed of powers sufficient to vanquish, and erect trophies over such a formidable phalanx of maladies. It is not indeed to be expected, that the waters alone can extend their influence over so wide a scope of disease. Yet physicians know how important are the effects, and how extensive the use of laxatives, when they combine, with their usual operation, tonic virtues; and from the extent of their healing powers, they hope almost every thing. In the present case, however, much of the effect produced, is to be attributed to the pure, elastic air of the mountains, where there are no stagnant waters to emit putrid effluvia—to the very high situation of the country, which checks and counteracts the morbid effects of the sun, and gives us in the summer and autumnal months, a climate never oppressive, but always grateful to our sensations. Who is ignorant of the happy effects resulting from mere change of situation, even without an improved atmosphere? How much more salutary then must be these effects, when the change is to an atmosphere always cool and temperate—always pure—always animating! The rugged passages, over which the patient necessarily travels, whether from the east or west, to arrive at these springs, come in for their share in advancing the medicinal reputation of these waters. The good consequences of agitation on rough roads, and of the tossings on a tempestuous ocean, in such diseases as have been mentioned, physicians have long and duly appreciated. Hence, in estimating the medicinal virtues of these springs, we ascribe to them effects, which they would not produce, unaided by such potent auxiliaries.

The water, in almost all cases, operates as a laxative and diuretic—sometimes, as an emetic, and sudorific. It uniformly strengthens the digestive organs, and sharpens the appetite. When used moderately, its usual effect is to exhilarate the spirits, and animate the countenance: taken in excess it causes languor, and stupor of the head; and from its rapid depletion, general debility. When prescribed with judgment, its successful operation can be made to extend over the two great classes of disease—those of debility, and those of strength; and hence another means of its extensive usefulness.

The IMPROVEMENTS, shall now, be concisely noticed. There are, at present, a large reservoir under ground—two commodious cold baths, two warm. A large boarding house, and two small detached buildings for lodging rooms. Besides which, the proprietor is now engaged in erecting large additions to the means of accommodation at the springs. The inns and boarding houses of the town, will also be rendered more convenient and comfortable to those who may visit the springs during the ensuing season.

The sequestered vale contiguous to the mineral springs, is now, though almost in a state of nature, a delightful spot; the enjoyment of which, alone, one would think almost sufficient to impart vigour and cheerfulness to the body and mind, labouring under disease and despondency. Nature has done much for it; yet from the hand of art, it is susceptible of very high degrees of embellishment. Who can withhold his grateful admiration of that gracious—that liberal provision, which Nature's God has made to remedy those physical evils, which afflict his creatures!

If men will take the trouble carefully to compare the means narrated in this plain statement of facts, with those which books and long experience have taught, they will require nothing more to bring conviction to their minds. They will here see detailed the whole catalogue of efficient remedies, in the treatment of chronic diseases—remedies which strengthen the system, without alarming the feelings—which conciliate health, whilst they amuse—which exhilarate the heart, whilst they invigorate the muscles, and sooth the nerves with new sensations.

Here amid the mazy forest, or rugged landscape, they steal the roses of youth from the zephyrs of the mountains and vallies, and purify their feelings, whilst they lave their bodies in the translucid streams, sparkling with the richest gems of Hygeia. J. W.

Bedford, Pennsylvania, April 11, 1811.