

BRIDGET, St., one of the patron saints of Ireland, who lived during the 6th century, was a daughter of one of the princes of Ulster, and took the monastic vow at a very early age. Her cell, the first in Ireland, was erected under a large oak tree, whence the place was called Kil-dara, the cell of the oak. The city of Kildare is supposed to derive its name from St Bridget's cell. A whole collection of miraculous stories have clustered round her name, and her reputation was not confined to Ireland, for St Bride was a favourite saint in England and in Scotland.

BRIDGET, St., of Sweden, was born about the year 1302. She was descended from a family of royal blood, and at the age of sixteen was married to Alpo, prince of Nericia. The husband and wife were equally devoted to works of piety, and undertook together a pilgrimage to the shrine of St Jago de Compostella. On their return both embraced the monastic life, and after the death of Alpo, his wife founded a new kind of monastery for monks and nuns. She then went on a pilgrimage to Rome, where she founded a house for Swedish pilgrims and students, and composed her *Revelations*. After another pilgrimage to Jerusalem, she died at Rome in 1373. She was canonized in 1391. The order of St Bridget flourished for some time; they had one house in Britain.

BRIDGETOWN. See **BARBADOS**, vol. iii. p. 359

BRIDGEWATER, a municipal (and formerly a parliamentary) borough and seaport in Somersetshire, on the Great Western Railway, 29 miles S.S.W. of Bristol. It is pleasantly situated in a level and well-wooded country, having on the east the Mendip range and on the west the Quantock hills. The town, which is well built, lies along both sides of the River Parret, here crossed by a handsome iron bridge. It has an ancient Gothic church with a spire 174 feet in height, a town-hall, court-rooms, a jail, a market-place, an infirmary, a free grammar school, and some almshouses. The river, which is subject to a bore, often two fathoms deep at the mouth, is navigable for vessels of 700 tons up to the town. The customs duties in 1874 were £7227. The chief imports are grain, coals, wine, hemp, tallow, and timber; the exports, agricultural produce, earthenware, cement, plaster of Paris, and bath-bricks, which last constitute the staple trade of the town. The value of the imports in 1874 was £118,509, and of the exports £5011. The town returned two members to parliament till 1870, when the borough was disfranchised. Population in 1871, 10,259. Bridgewater is said to derive its name, which appears in earlier times as Brugge Walter, from a certain Walter de Douay, to whom the manor was presented at the Conquest. In the reign of Henry II. a splendid castle was built and a harbour constructed by William de Briwere; and in 1230 a Grey-Friars' monastery was founded by his son. The castle was taken by the Royalists in 1643, and was almost completely demolished after its capture by the Parliamentary forces in 1645. Admiral Blake was a native of Bridgewater.

BRIDGEWATER, FRANCIS EGERTON, THIRD DUKE OF, who has sometimes been styled "the Father of British Inland Navigation," was born in 1736. The navigable canal which he projected for the transport of the coal obtained on his estates, was (with the exception of the Sankey canal) the first great undertaking of the kind executed in Great Britain in modern times. The construction of this remarkable work was carried out by Brindley, the celebrated engineer. (See **BRINDLEY** and **CANAL**.) The untiring perseverance displayed by the duke in surmounting the various



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difficulties that retarded the accomplishment of his project, together with the pecuniary restrictions he imposed on himself in order to supply the necessary capital, affords an instructive example of that energy and self-denial on which the success of great undertakings so much depends. Though a steady supporter of Mr Pitt's administration, he never took any prominent part in politics. On his death, March 8, 1803, the ducal title became extinct.

BRIDGEWATER, THE REV. FRANCIS HENRY, EIGHTH EARL OF, was born in 1758 and died on the 11th February 1829. He is best known as the originator of the *Bridge-water Treatises*. By his will he devised the sum of £8000, at the disposal of the president of the Royal Society, to be paid to the author or authors selected by the president to write and publish 1000 copies of a treatise "On the Power, Wisdom, and Goodness of God, as manifested in the Creation." Mr Davies Gilbert, who then filled the office, selected eight persons, each to undertake a branch of this subject, and each to receive £1000 as his reward, together with any benefit that might accrue from the sale of his work, according to the will of the testator.

The treatises were published as follows:—1. *The Adaptation of External Nature to the Moral and Intellectual Condition of Man*, by the Rev. Thomas Chalmers, D.D. 2. *The Adaptation of External Nature to the Physical Condition of Man*, by John Kidd, M.D. 3. *Astronomy and General Physics considered with reference to Natural Theology*, by the Rev. William Whewell, D.D. 4. *The Hand, its Mechanism and Vital Endowments as evincing Design*, by Sir Charles Bell. 5. *Animal and Vegetable Physiology considered with reference to Natural Theology*, by Peter Mark Roget. 6. *Geology and Mineralogy considered with reference to Natural Theology*, by the Rev. William Buckland, D.D. 7. *The Habits and Instincts of Animals with reference to Natural Theology*, by the Rev. William Kirby. 8. *Chemistry, Meteorology, and the Function of Digestion, considered with reference to Natural Theology*, by William Prout, M.D. The works are of unequal merit; several of them took a high rank in apologetic literature.

BRIDLINGTON, BRELINGTON, or BURLINGTON, a market-town of England, in the East Riding of Yorkshire, on the North-Eastern Railway, 23 miles from Scarborough. It lies about a mile from the coast on a gentle acclivity. The streets are narrow and the houses irregularly built. A large chamber over the old priory gateway (of the time of Richard II.) is used as a town-hall. The town has also a corn exchange, a temperance hall, a mechanics' institute, and two subscription libraries. The parish church of St Mary's preserves a considerable part of the Augustinian priory which was erected in the 12th century, by Walter de Gaunt, a relative of the Conqueror, and continued to flourish till 1537, when its last prior was executed for taking part in the "Pilgrimage of Grace." On the coast is situated the pleasant watering-place of Bridlington Quay, which has recently increased in reputation. The harbour is enclosed by two stone piers, and there is good anchorage in the bay. The beach consists of a fine firm sand, and is bordered by a parade with ornamental gardens. Besides hot and cold baths, there is a chalybeate spring esteemed for its medicinal properties; and the town is supplied with drinking-water from an intermittent fountain discovered below high water mark in 1811. The most important public building is the Victoria Rooms, which comprise a ball-room, a reading-room, a news-room, &c. The united population of Bridlington and Bridlington Quay, which in 1851 was 2432, amounted in 1871 to 6203. Bridlington was placed by Henry I. under the civil jurisdiction of the priors, and by John was allowed to hold a market and an annual fair. In 1643 the town was cannonaded by Admiral Batten, on account of the presence of Queen Henrietta, who had landed with a supply of arms. Sir George Ripley and John de Bridlington were connected with the priory; Kent the landscape-gardener was a native of the town; and his patron, Robert Boyle, bore the title

of earl of Burlington, from which the name of Burlington House in London is derived.

BRIDPORT, a parliamentary and municipal borough and market-town of England, in the county of Dorset, 18 miles by rail N.W. from Dorchester between two branches of the River Brit, from which it takes its name. The main part of the town is about a mile from the sea, with which it is connected by a single winding street, terminating in a quay surrounded by a fishing village. The principal buildings comprise a town-hall, a market-house, a jail, a custom-house, a mechanics' institute with reading and lecture rooms; there are also a school of art, almshouses, and several charities. The parish church of St Mary, a cruciform edifice in the Perpendicular style, was restored in 1865. The harbour, which had become choked with sand, was rendered available and secure for vessels of 250 tons by extensive improvements undertaken in 1742 and 1823. The total value of the imports, which consist mainly of timber, coal, and flax, was in 1874 £89,616; and the exports amounted to £18,021. Its principal articles of manufacture have long been sail-cloth, cordage, linen, and fishing-nets. Bridport formerly returned two members to parliament, but since 1868 it returns only one. The population was 7670 in 1871. Though a place of considerable antiquity, it has very little historical importance. Its mint is mentioned in *Domesday Book*. In the reign of Henry VIII. the town and district had a monopoly of the supply of cordage for the Royal Navy.



Arms of Bridport.

BRIEG, the capital of a circle in the Prussian province of Silesia and government of Breslau, is situated on the left bank of the Oder, and on the Breslau and Oppeln Railway, 27 miles S.E. of the former town. It is well built, and has a castle (the residence of the old Piastic counts of Brieg), a lunatic asylum, a gymnasium with a good library, and several churches and hospitals. Its fortifications were destroyed by the French in 1807, and are now replaced by beautiful promenades. Brieg carries on a considerable trade, its chief manufactures being linen, cotton, and woollen goods, porcelain and machinery, hats, pasteboard, and cigars. Important cattle-markets are held there. Brieg, or, as it is called in early documents, *Civitas Alta Ripæ*, obtained municipal rights in 1250 from Duke Henry III. of Breslau, and was fortified in 1297; its name is derived from the Polish *Brzeg* (shore). In the 14th century it became the seat of a line of counts, by one of whom the castle was built in 1341. Burned by the Hussites in 1428, the town was soon afterwards rebuilt, and in 1595 it was again fortified by Duke Joachim Frederick. In the Thirty Years' War it suffered greatly; in that of the Austrian succession it was heavily bombarded by the Prussian forces; and in 1806 it was captured by the French. Population in 1871, 15,372.

BRIEL, BRIELLE, or BRIL, a fortified seaport town of Holland, in the province of South Holland, and capital of an arrondissement, stands on the north side of the island of Voorne, near the mouth of the Maese, 14 miles west of Rotterdam, in 51° 54' 11" N. lat. and 4° 9' 51" E. long. The town is well built and strongly fortified, and has an arsenal, military magazines, barracks, and a good harbour. The tower of St Catharine's church serves as a lighthouse. Briel is remarkable in history as having been the first place captured in the struggle that resulted in the independence of the Netherlands—a fact which is commemorated in the popular rhyme, *Den eerste van April verloor duc d'Albe syne Bril*, punning on the meaning of Bril, which is the

Dutch for "spectacles." Admiral Van Tromp was born in the town. The inhabitants, who are principally engaged as fishermen and pilots, numbered 4058 in 1869.

BRIGADE, a tactical body, composed of two or more regiments of cavalry or infantry, under the command of a general officer of the lowest grade. The term *brigade* is also applied to from four to eight batteries of artillery working together, and to the small detachments (eight or nine men) of engineers employed in excavating saps in siege operations. Two or more brigades constitute a division, two or more divisions a corps d'armée, two or more corps d'armée an army.

BRIGADE-MAJOR, a third-class staff officer, appointed by the brigadier to assist him in the management of his brigade.

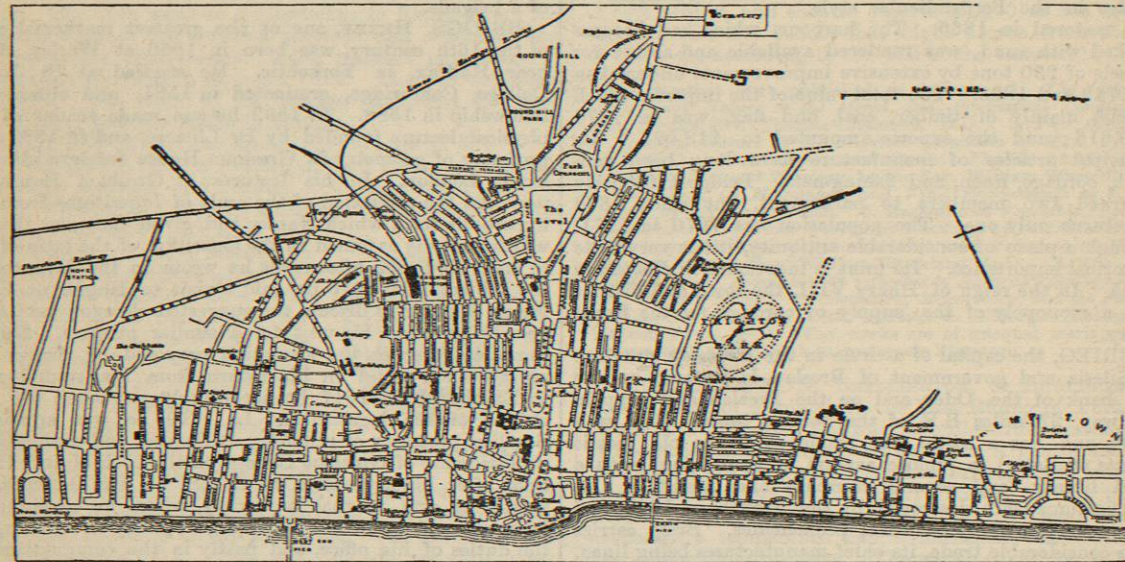
BRIGADIER, a general officer of the lowest grade, next in rank above a colonel, who is intrusted with the command of a brigade.

BRIGGS, HENRY, one of the greatest mathematicians of the 16th century, was born in 1556 at Warley Wood near Halifax, in Yorkshire. He studied at St John's College, Cambridge, graduated in 1581, and obtained a fellowship in 1588. In 1592 he was made reader of the physical lecture founded by Dr Linacre, and in 1596 first professor of geometry in Gresham House (afterwards College), London. In his lectures at Gresham House he proposed the alteration of the scale of logarithms from the hyperbolic form which Napier had given them, to that in which unity is assumed as the logarithm of the ratio of ten to one; and soon afterwards he wrote to the inventor on the subject. In 1616 he paid a visit to Napier at Edinburgh in order to discuss the suggested change; and next year he repeated his visit for a similar purpose. During these conferences the alteration proposed by Briggs was agreed upon; and on his return from his second visit to Edinburgh in 1617 he accordingly published the first chiliad of his logarithms. In 1619 he was appointed Savilian professor of geometry at Oxford, and resigned his professorship of Gresham College on the 25th of July 1620. Soon after his settlement at Oxford he was incorporated master of arts in that university, where he continued a laborious and studious life, employed partly in discharging the duties of his office, and partly in the computation of logarithms and in other useful works. In 1622 he published a small tract on the *North-West Passage to the South Seas, through the Continent of Virginia and Hudson's Bay*; and in 1624 he printed at London his *Arithmetica Logarithmica*, in folio, a work containing the logarithms of thirty thousand natural numbers to fourteen places of figures besides the index. He also completed a table of logarithmic sines and tangents for the hundredth part of every degree to fourteen places of figures besides the index, with a table of natural sines to fifteen places, and the tangents and secants for the same to ten places; all of which were printed at Gouda in 1631 and published in 1633 under the title of *Trigonometria Britannica*. Briggs died on the 26th of January 1630 in the 74th year of his age. Dr Smith, in his *Lives of the Gresham Professors*, characterizes him as a man of great probity, a con-temper of riches, and contented with his own station, preferring a studious retirement to all the splendid circumstances of life.

His works are—1. *A Table to find the Height of the Pole, the Magnetical Declination being given*, London, 1602, 4to. 2. "Tables for the Improvement of Navigation," printed in the second edition of Edward Wright's treatise entitled *Certain Errors in Navigation detected and corrected*, London, 1610, 4to. 3. *A Description of an Instrumental Table to find the part proportional, devised by Mr Edward Wright*, London, 1616 and 1618, 12mo. 4. *Logarithmorum Chilias prima*, London, 1617, 8vo. 5. *Lucubrations et Annotations in opera posthuma J. Naperi*, Edin., 1619, 4to. 6. *Euclidis EL-*

mentorum VI. libri priores, London, 1620, folio. 7. *A Treatise on the North-West Passage to the South Sea*, London, 1622, 4to, reprinted in Purchas's *Pilgrims*, vol. iii. p. 852. 8. *Arithmetica Logarithmica*, London, 1624, folio. 9. *Trigonometria Britannica*, Gouda, 1663, folio. 10. *Two Letters to Archbishop Usher*. 11. *Mathematica ab Antiquis minus cognita*. Some other works, as his *Commentaries on the Geometry of Peter Ramus*, and *Remarks on the Treatise of Longomontanus respecting the Quadrature of the Circle*, have not been published.

BRIGHTON, a parliamentary borough, and one of the most fashionable watering-places of England, is situated on the coast of Sussex between Beachy Head and Selsea Bill, in 50° 50' N. lat. and 0° 8' W. long. By railway it is 50 miles from London and 28 from Chichester. Its sea-frontage of handsome mansions and hotels extends upwards of three miles from Kemp Town in the east to what was formerly the suburban village of Cliftonville in the parish of Hove; while its depth inland at the centre is rather



Plan of Brighton.

in the reign of Henry VII., and is probably one of the oldest buildings in the town, and Trinity chapel, in Ship Street, memorable as the scene of the labours of Frederick William Robertson. The most important of the secular edifices are the town-hall, the market, the pavilion, the aquarium, the theatre, the proprietary college, the Sussex county hospital, the new workhouse, the infirmary, the blind asylum, and the female orphan asylum. The pavilion, with its strange assemblage of domes and minarets, was built in 1784-7 as a residence for the Prince of Wales (afterwards George IV.), and about 1818 it was refashioned by Nash into a grotesque imitation of Chinese architecture. It has a frontage to the east of 300 feet, and occupies, with its gardens, about 11½ acres. In 1850 it was purchased by the town for £53,000, and its spacious rooms, greatly altered from time to time, are now appropriated to a variety of uses,—one serving as a museum, another as an assembly-room, others as picture-galleries. The pavilion dome, formerly the royal stables, is now converted into a magnificent hall for high-class musical performances; it is lighted by a glazed dome, with



Arms of Brighton.

more than a mile. In general appearance the style of the town strikingly resembles that of London; and many of its streets and squares seem as if they had been transported as they stand from the "West End." As far, indeed, as its character is not affected by its natural situation, it is nothing more or less than a vigorous offshoot supported by the sap of the greater city, a fact which is popularly recognized by the designation of London-super-Mare. During the present century its growth has been rapid and continuous, about four hundred new houses being often built in the space of a year. Its streets and squares already amount to four hundred; but in comparison with this extent the number of its really remarkable buildings is rather small, and nearly all of them are of modern date. Among its twenty Episcopalian and between thirty and forty Nonconformist churches two only need be specially mentioned,—the parish church of St Nicholas, which was built

a diameter only 20 feet less than that of the dome of St Paul's of London. The county hospital was built in 1828 by Sir Charles Barry, at a cost of £10,000, and has since been largely extended. It is "open to the sick and lame poor of every country and nation." There are a large number of minor benevolent establishments in the town, and so various are its educational institutions that it has been called the city of schools. Among the bathing establishments the most remarkable are Brill's and the New Turkish Baths; the former includes extensive swimming baths for both sexes.

The tendency of the currents in the channel opposite Brighton is to drive the shingle eastward, and within the memory of man large portions of the coast have thus been destroyed. To prevent this erosion the whole sea-frontage of the town at the east end is protected by a great sea-wall, which was built between 1827 and 1838. It is a mile long, 60 feet high, and 23 feet thick at the base, and cost £100,000. The beach is further ribbed from north to south by various "groynes," or jetties, one of which, constructed of concrete in 1867, at a cost of £5000, stretches about 50 feet into the sea. There are two piers which serve as promenades. The first, an elegant chain fabric commenced by Sir S. Brown, R.N., in 1822, was

opened to the public in the following year. It is 1136 feet in length and 15 feet in width, the four cast-iron columns on which it is suspended being supported by stone buttresses based on oaken piles driven into the solid chalk. The cost was £20,000, and in 1836 an additional expenditure was necessary to repair the damage inflicted by a great storm in November of that year, which was within a little of destroying the structure altogether. A new pier further to the west was opened in 1866. Its total length is 1115 feet, and it affords accommodation for 2000 people. The town is well supplied with water by the corporation water-works, and by an artesian well, 1285 feet deep, at Warren Farm, the boring of which lasted from 1858 to 1862. The sewage is effectively removed by an intercepting sewer 5 miles in length, which discharges into the sea 2 miles east of the parish boundary. Since the opening of the Brighton railway in 1841 the town has developed wonderfully; but, with the exception of the railway works, no manufacturing establishment exists, and no tall chimneys are seen. Owing to the absence of a natural harbour the commerce of the place is insignificant, but the mackerel and herring-fisheries are carried on by about 120 boats. The races, which are held in August to the north and north-east of the town, and the great volunteer reviews, which of late years have drawn many thousands to the neighbouring downs, add considerably to the local trade. The town is governed by a mayor, thirteen aldermen, and a council. It returns two members to parliament.

Brighton, originally Brighthelmstone, plainly derives its name from some Saxon Brighthelm, but who or what he was there seems no means of discovering. The present contracted form of the word came into general use only in the end of the 18th century, but it is sometimes found in the documents of the time of Charles II. At the time of the Conquest Brighton was a small fishing village, and the lordship of the manor was bestowed by the Conqueror on his nephew William de Warrenne, who received as rent from the fishermen 4000 herrings. In 1513 it was burnt by the French under Messire Pregel, whom the English chronicles call Prior John; and in 1545 it was again greatly damaged by Claude d'Anneballe, the admiral of Francis I. At that time it is represented as a quadrangular town of four or five streets. There were then no defences, but in 1558 a small circular fort was erected by Elizabeth. The town seems to have rapidly recovered its prosperity, for in 1579 it possessed 80 fishing-boats, with 400 fishermen and 10,000 nets. The whole Elizabethan town, however, has been destroyed by the sea, which in 1699 swept away 160 houses, and in 1703 and 1706 did almost as much damage. The modern reputation of Brighton is due to Dr Richard Russell, a native of Lewes, who resided there in 1750, and wrote a book on the advantages of sea-bathing, which led a number of people of high rank—among others the dukes of Cumberland and Marlborough—to place themselves under his direction. The Prince Regent followed, and the fortunes of Brighton were made. Bedford Square was commenced in 1810, and the building of Kemp Town took place between 1821 and 1830. A charter of incorporation was granted in 1854. In 1761 the population was only about 2000; in 1801 it had risen to 7339, by 1841 to 48,567, and by 1851 to 69,673. In 1861 there were 77,693 inhabitants in the municipal borough, and 87,317 within the parliamentary limits, the number of houses being respectively 12,727 and 13,983, while in 1871 the municipal borough had a population of 90,011, inhabiting 14,438 houses, and the parliamentary borough 103,758, with 16,284. See Lower's *History of Sussex*, 1870, and papers in the *Sussex Archaeological Collections*.

BRIGHT'S DISEASE, a term in medicine applied to a class of diseases of the kidneys which have as their most prominent symptom the presence of albumen in the urine, and frequently also the co-existence of dropsy. These associated symptoms in connection with kidney disease were first described in 1827 by Dr Richard Bright. Since that period the subject has been investigated by many able physicians, and it is now well established that the symptoms above named, instead of being as was formerly supposed the result of one form of disease of the kidneys, may be dependent on various morbid conditions of those organs. Hence the term Bright's disease, which is retained in medical

nomenclature in honour of Dr Bright, must be understood as having a generic application.

Two varieties of Bright's disease are described, the *acute* and the *chronic*,—the former representing the inflammatory and the latter the degenerative form of kidney disease.

Acute Bright's Disease (synonyms—*acute desquamative nephritis*, *acute albuminuria*, &c.) commonly arises from exposure to cold, from intemperance, or as a complication of certain acute diseases, such as erysipelas, diphtheria, and especially scarlet fever, of which it is one of the most frequent and serious consequences. In this form of the disease the kidneys become congested, their blood-vessels being gorged with blood, while the tubules are distended and obstructed by accumulated epithelium, as also by effused blood and the products of inflammation, all which are shed off and appear in the urine on microscopic examination as *casts* of the uriniferous tubes.

The symptoms to which the condition gives rise are usually of a severe character. Pain in the back, vomiting, and febrile disturbance commonly usher in the attack. Dropsy, varying in degree from slight puffiness of the face to an accumulation of fluid sufficient to distend the whole body, and to occasion serious embarrassment to respiration, is a very common accompaniment. The urine is reduced in quantity, is of dark, smoky, or bloody colour, and exhibits to chemical reaction the presence of a large amount of albumen, while, under the microscope, blood corpuscles and casts, as above mentioned, are found in abundance.

This state of acute inflammation may by its severity destroy life, or, short of this, may by continuance result in the establishment of one of the chronic forms of Bright's disease. On the other hand an arrest of the inflammatory action frequently occurs, and this is marked by the increased amount of the urine, and the gradual disappearance of its albumen and other abnormal constituents; as also by the subsidence of the dropsy and the rapid recovery of strength.

Of *chronic Bright's Disease* there are several forms, named according to the structural changes undergone by the kidneys. The most frequent of these is the *large white kidney*, which is the chronic form of the desquamative nephritis above mentioned.

Another form of chronic Bright's disease is the *waxy* or *amyloid kidney*, due to the degenerative change which affects first the blood-vessels and subsequently also the tubular structures of the organ. This condition is usually found associated with some chronic ailment of an exhausting character, such as disease of bones and other scrofulous affections, or with a generally enfeebled state of health. It is marked by the passage of large quantities of albuminous urine, and is frequently accompanied with general dropsy, as also with diarrhoea and consequent loss of strength. A third form of chronic Bright's disease is the *contracted kidney*, depending on the condition known as *cirrhosis*, in which the kidneys become reduced in bulk, but dense in texture, from an abnormal development of their connective tissue and relative atrophy of their true structure. This form of the disease, which is commonly, though not exclusively connected with a gouty constitution, is apt to escape detection in its earlier stages from the more obscure character of the symptoms, there being less albuminuria and less dropsy than in the other varieties. Its later progress, however, enables it to be readily recognized. Dimness of vision, due to a morbid condition of the retina, and also hypertrophy of the heart leading to fatal apoplexy, are frequent accompaniments of this form of the disease.

A fourth variety of chronic Bright's disease is described by authors on the subject, viz., *fatty degeneration of the kidneys*, occasionally occurring in old age and in connection with a similar degeneration of other organs.