ing, indicated a recourse to astringents internally—such as ol. terebinthinae; liq. ergotae; tinct. ferri perchlorid.; acid. sulphuric. dilut. These were taken at short intervals, generally every two hours. It is difficult to decide which, if either, of these had any effect in controlling the hemorrhage. It was, however, while taking the acid. sulphuric. aromatic, that matters began to improve. His food at first consisted of milk and bread, with other farinaceous diet, and subsequently beef-tea and animal food; the bowels were regulated by enemata.

Part Second.

REVIEWs.

1. Anatomical and Pathological Observations. By John Goodsir. 8vo. Edinburgh: 1845.

2. Cellular Pathology. By Rudolph Virchow. Translated by Frank Chance. 8vo. London: 1860.

3. The General Characters of Cells. By S. Stricker. In Stricker's "Human and Comparative Histology." 8vo. London: 1870.

4. Case of Hypertrophy of the Spleen and Liver, in which Death took place from Suppuration of the Blood. "Edinburgh Medical and Surgical Journal," October 1845. By John Hughes Bennett. Leucocythemia or White Cell Blood. 8vo. Edinburgh: 1852. By the Same. Text-Book of Physiology. 8vo. Edinburgh: 1872. By the Same.

5. On the Softening of Coagulated Fibrin. By George Gulliver. "Transactions of the Medical and Chirurgical Society," Vol. xxii. 8vo. London: 1839. Notes on Morbid Parts. "Edinburgh Medical and Surgical Journal," July 1843. By the Same.

In the exercise of his duties, the critical reviewer has occasionally to take retrospective glances of science, in order to estimate the value of evidence in relation to the history of recent discoveries. Thus it was that the "Quarterly" reviewer of the year 1815 had to show that Prevost in Geneva had anticipated some of the results obtained by Dr Wells in England, concerning the nature and causes of dew; and similar examples might be indefinitely multiplied in physiological literature, as was shown in the Sydenham Society's edition of Hewson's works. Such ventilations, from time to time, are essential to the preservation of the purity of the well
and stream of historical science, and desirable, if we intend to cherish the memory of the authors of the landing-places of scientific discovery, and—so to speak—to honour the creator in the creation. It is as duteous and generous for a nation to rejoice in its worthies as faithless and ignoble to neglect them; and the true patriot will never be indifferent to the fair fame of his countrymen. And now, in this spirit, we mean to assert briefly the just claims of an eminent member of that band of illustrious anatomists by which our metropolis has been distinguished and adorned from the time of the Monros to the present day; and, in asserting the cause of justice in this case, to show that he has been subjected, and is still subjected, to most unworthy treatment by certain German physiologists, who have not scrupled to practise in like manner on some other of our countrymen. This task we undertake the more readily, because the wrong is by no means confined to the foreign and original perpetrators thereof, but is shared to a great extent by that large number of our native physiologists who have afforded— it is to be hoped ignorantly—either patronage or condonation to the offenders. The subject might appear somewhat stale, only, as already hinted, it has been freshened of late by a continuance of the offence; and this conduct, so far as we know, has not been met by any adequate check from the periodical press. If, in our late review (Edinburgh Medical Journal, April 1873) of the first volume of Stricker's Histology, the name of John Goodsir was omitted, it was simply because the conduct of the German writer appeared so vain and grievous as to demand emphatic notice in a separate Article.

In the summer of 1842 and winter of 1842–3, John Goodsir delivered, at our College of Surgeons, those memorable lectures, part of which, relating to the secreting structures, appeared in the Transactions of the Royal Society of our city, in 1842, and the substance of the whole in the work specified above. It was republished in 1868, in two octavo volumes, under the care of Professor Turner, and with a valuable memoir, by Dr Henry Lonsdale, of Goodsir's life, on which we have freely drawn for some of the facts in the present review; and have to express our gratitude to the biographer for his meritorious labours. In those works Goodsir announced important discoveries, which are well known, since they have become part and parcel of physiological science, and some of which we shall presently specify. They are all remarkable, not as examples of those fortuitous and happy events by which philosophers occasionally stumble on discovery, but as the successful result of careful and persistent research, legitimately disclosing truths which have much enhanced the fair fame of our city and the bounds of physiological knowledge.

In the year 1830 was published in folio, at Leipsic, one of the most important anatomical memoirs of this century, by Johannes Müller, and entitled De Glandularum secernentium structura, etiori earumque prima formatione in homine atque animalibus. All
the results that this illustrious physiologist obtained as regards the ultimate secreting structure were to the effect that this consists of the glandular follicles or tubules, thus mistaking the purse for the treasure within. He did not perceive anything further; and this was the view thereafter entertained throughout Germany, and, indeed, wherever physiological science was cultivated, until the advent of John Goodsir's researches in Edinburgh. There was, indeed, an observation by Bowman (Lancet, January 1842) of oily drops within the cells of a fatty liver; and a later description of cases of jaundice by Gulliver (Edinburgh Medical and Surgical Journal, July 1843, p. 54), in which the interior of the cells of the same organ were surcharged with biliary matter, chiefly collected around the nucleus of each cell. But these facts no way affected the originality of Goodsir's discovery, and its truthfulness was specially mentioned as supported by the presence of an excess of bile in those cells as a morbid condition.

Goodsir examined the nucleated cells of many glands of different animals, and found the characteristic secretions of these glands within those cells. Thus, he found milk in the mamma of the bitch; the inky matter in the cells of the ink-bag of Loligo sagittata; bile in the livers of Helix aspersa, Uraster, Modiola, Pecten, Pirena, Phallusia, Aplysia, Buccinum, Patella, Nereis, and Carcinus; uric acid in the kidney-cells of Helix aspersa; spermatozoa in the testes of Squalus and Echiurus; and the Tyrian dye in Janthina fragilis. Early in his inquiries, seeing the glandular secretion situated between the nucleus and the cell-wall, he supposed this last to be the secreting structure; but he soon corrected this error by assigning the secreting function to the nucleus. He observed milky chyle in cells; and this is a very interesting fact, as showing that the molecular base of the chyle is not a result of mere concoction or emulsion, but truly an organic secretion. By such observations, sagaciously designed and skillfully executed, the German doctrine, after an undisputed reign of many years, was finally consigned to the vast limbo of error; and the Scottish physiologist established the truth that "the ultimate secreting structure is the primitive cell." And this result of his researches he was ever enforcing; as he well might be justly proud of a discovery which marks an era in physiology, and discloses truth in one of her most recondite recesses.

But his observations on cells did not cease here. The latest conclusions as to the formation of cells by division, in opposition to the doctrine of their free development, are after his researches. He saw and clearly described the central cell, and all the other cells of its department deriving their origin from that central cell, this being the mother of all within its own territory; so that nutritive centres are merely cells which are germinal spots or departments, each containing simple or developed cells, all related to the central or capital cell, around which they are grouped; and thus this is the mother of all the cells within its territory.
Now the discoveries, so laboriously and successfully made by our countryman, have been made familiar in Britain through the Germans, who, so far from honouring the creator in his creation, have treated him with ignoble contempt. He deeply felt this indignity, and so did those friends who were most dear to him. And it is more in sorrow than in anger that we are obliged, by a continuance of the injustice to this eminent physiologist, to recur to the facts. When Virchow's work on Cellular Pathology was published, everybody admired the value of many of the views enunciated therein, but nobody seemed to care whence they came, except, indeed, Goodsir, and a few more physiologists, who stood aghast at the use of his discoveries and the suppression of his name. It was mentioned but once in the whole work, and then on a point quite beside the main subject; only, by a contrivance which looked very like what the French call mauvaise plaisanterie, the book was dedicated to Goodsir! How much he was affected by this mean treatment has been described by his worthy biographer, Henry Lonsdale. But we forget whether the sequel was related. However this may be, when the proposal was made to elect the German offender to the Honorary Fellowship of the Royal Society of Edinburgh, Goodsir's surviving brother, the Rev. Joseph Taylor Goodsir, published a very temperate and just remonstrance, now before us, and entitled, "Grounds of Objection to the Admission of Professor Virchow to the Honorary Fellowship of the Royal Society of Edinburgh" (2d edition, 4to, 18 pages, Neill and Co., Edinburgh, 24th December 1868). However, Virchow's influence prevailed over injured innocence, and he was elected to that Fellowship; and, so far as we remember, no proper notice was taken by the critical press of Virchow's conduct to Goodsir, save the honourable article thereon in the British Medical Journal of 12th January 1861.

How much he extended his researches into the domain of comparative anatomy and physiology is well known, and we have already intimated that as regards the ultimate secreting structure. Yet in the treatise on Cells, which is cited above from Stricker's work on Human and Comparative Histology, even the very name of Goodsir is, with a single and miserable exception, totally suppressed. But in spite of all such attempts to wipe the name of our illustrious citizen clean out from the records of that science which he has extended and adorned, Professors Virchow and Stricker may rest assured that the countrymen of Goodsir will not willingly let his name and achievements die. No doubt, we may be told that space was wanting for historical notices; but it was found for far less important names, and Stricker's book, if tried by its pretensions, will be found remarkably redundant and deficient. Space was provided in it for many errors, and for much extraneous matter which is not part of microscopic anatomy; and thus viewed, it is simply beneath criticism that in a work professing to be one of "Human and Comparative Histology" no room was found by the German for two or three lines as a mere act of justice to the worthy Scotch phy-
siologist. In March 1867, Good sir was buried in the Dean Cemetery of Edinburgh, near the scene of those labours which he loved so well, and side by side with his friend Edward Forbes. Truly "these were honourable men in their generation;" like Saul and Jonathan, "they were lovely and pleasant in their lives, and in their death they were not divided."

In the late more lengthy than profitable discussions on tubercle, at the London Pathological Society, one of the speakers—we think Dr Charles J. B. Williams—truly remarked that some persons seemed to conclude that the giving of a new name to a part was tantamount to its original discovery. Thus, Hughes Bennett having used the old term suppuration in the title of his original case of an excessive and morbid accumulation of pale globules in the blood, connected with or related to an enlargement of the spleen, objection was taken that they were not pus-globules, and so we had afterwards such terms as leukhemia, leucocythemia, white cell blood,—as if mere verbal niceties could affect the date of the discovery, or anybody had ever shown a difference between pus-globules and pale blood-globules. These mere words are quite beside the question of originality, and, indeed, are little more than mist to hide the truth. And this, in the present case, is, that Bennett is the discoverer of what he recorded as, primarily, a suppuration of the blood, "independent of inflammation," in connexion with enlargement of the spleen; and that Virchow afterwards recognised the disease as a secondary one resulting from a peculiar affection of that organ. Thus far much credit is due to the German; only it is little in favour of his candour that he suppressed any reference to the old and excellent researches of Hewson, or acknowledgment of the undoubted merit of Bennett as the first discoverer of leukhemia. Indeed, a great value of the discovery is the illustration it affords to Hewson's views concerning the office of the spleen and lymphatic glands.

Again, Virchow gave the name of Thrombosis, thus pretending to its discovery, to the softening of clots of fibrin. But the discovery was an old one. It had been made as early as 1839 in England; and by a long series of experiments and observations, by which good proof was given that the softening of fibrin is an elementary and very important disease, quite distinct and of essentially different import from suppuration. But though all this had been well established many years before Virchow wrote, he has always, and very consistently with his other conduct, totally suppressed such truth, and conveyed the discovery, as if it were wholly his own, under a new name, to his book on Cellular Pathology.

With every respect for our German brethren, we cannot but feel, and think we have shown, that they have not been equally respectful of us; and we might complain more did we not feel that, however ungenerous they have been, our own younger physiologists have been even more to blame in ignoring the glorious achievements of their scientific ancestors.