

other conditions do not come in to oppose the manifestation of this property. Platinum welds easily at a white heat, because its non-oxidizable surface, like that of ice, takes on a superficial fusion. To weld iron successfully it is necessary that its surface should be clean, that is free from oxide. Iron containing phosphorus welds more easily than pure iron, because its point of fusion is lower. Steel which is more fusible still, welds at a lower temperature than iron, but the process is a more delicate one. Silver too, like iron and platinum, has the property of expanding when it solidifies; but as it melts at a cherry-red heat, it is easier to form it by casting than by welding. Bismuth and zinc are also included in the same class, but they are so very brittle near their fusion points that no one would think of attempting to weld them either by hammering or pressure.

Iron in welding therefore, only follows the example of water. The careful comparative study of these two bodies, even though at first sight so comparatively dissimilar, cannot fail to furnish results of great interest to the metallurgist. The work of the puddler is also based upon the same phenomena as that of welding. When the puddler forms his ball in the furnace, it is done by rolling together or aggregating the crystals of iron as they form in the mass of melted iron and slag. In other words, the semi-fused crystals are welded or reglazed together by the mechanical action of the puddler.—[M. Jordan in Iron.

Fritz Reuter.

Publication of the posthumous works of Fritz Reuter have been begun in Germany, and the first volume is accompanied by a very sympathetic biography of him by the editor, Adolph Wilbrandt. With the full consent of the poet's widow, a frank account is given of his passion for drink, which is rightly regarded as a disease, for which there was (after it had once been contracted) no moral responsibility whatever. In the beginning Reuter drank hard in order to forget his misery as a political prisoner in Prussia's sketches, and when, after seven years (he had been condemned for thirty), his deliverance came, he carried into private life this periodical craving which must be satisfied, which ran its course like a fever, and from which his wonderful constitution rallied invariably with renewed vigor. But the habit nearly made a wreck of him. He wanted to become a painter in opposition to his father's wishes, who sent him back to the university to study law. Here the temptation to spree was

too much for him, and he next devoted himself to farming, with indifferent success, eking out his support by teaching. In this career he gained the friendship of a Pomeranian landowner, to whose confidence in him and knowledge of human nature Reuter owed the fortunate marriage which rescued him from an obscure and perhaps melancholy fate. This friend, knowing Reuter's betrothed to be troubled with scruples about the match, dared to lead her to where he lay under the influence of one of his attacks. The result justified his calculations. She resolved to undertake the saving of a life; and though she failed, as other trusting wives had done before her, to destroy her husband's appetite for drink, she had the rare consolation of seeing neither his constitution nor his morals undermined by it. The wedding took place in 1851, and Reuter died only last July, of heart disease. As least as early as 1866, however, his powers as a writer had reached their climax. The drollery which characterizes Reuter's works found ready acceptance with the Mecklenburgers, who are never weary of hearing and telling humorous stories; and Reuter not only had a great store of these but told them exceedingly well before he ever put pen to paper.—Nation.

A Great Swimmer.

Captain Boynton, the American who jumped from an ocean steamship off the coast of Ireland, and swam thirty miles during one of the most terrific gales of the season, has been giving some very successful exhibitions of his swimming dress upon the Thames. Vast crowds of people line the banks of the river every time that he appears, and watch with the greatest interest his movements in the water. The other day he went down to Wapping Old Stairs and put on his swimming clothes, consisting of an india-rubber suit in two parts—one covering the chest, arms, and back of the head; the other the legs and feet. This is put on over an ordinary suit. After being adjusted the parts are inflated by four tubes, and when full of air the wearer steps into the water without the slightest fear. Captain Boynton raised his flag, ate his lunch, read a book, blew a horn, and went through a variety of performances, to the great delight of the crowds assembled upon London Bridge and along the banks of the river. He was loudly cheered. At Temple Stairs he came out for a moment's rest, without showing any symptoms of fatigue, and soon after plunged in again and started for Putney. The success of this swimming dress has been clearly established.—*American Register*.