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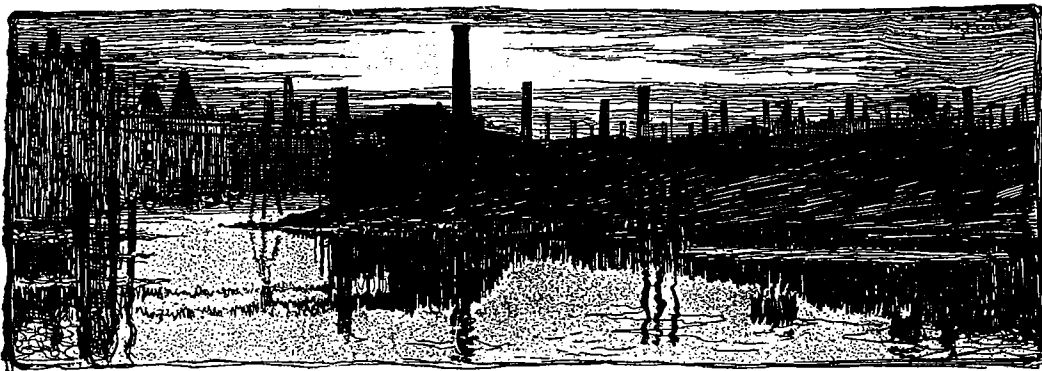
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a holiday by the sea-side at Bridlington, Morecambe Bay, or Scarborough, and evening amusements are provided by several theatres and music halls, though it is to be confessed that the entertainment most patronized during our visit to the town was not of an edifying character. The programme consisted of a farce called *An Old Woman in a Fix* (the very title of which seemed to strike the audience as being humorous to a side-splitting degree), and a novel exhibition in which the spectators took part. A new silk hat ("one of Tyler's best") was offered to the "gastro-nomic prodigy" who could eat one of "Fiddlestick's celebrated all-hot pies" the quickest; and the contest provoked an uproar of mirth that must have warmed the managerial heart. But the more sedate citizens resort to the neighboring tap-room for the discussion of affairs of state. Sometimes there are flashes of rough wit, and the stolid Yorkshire mechanic becomes as eager a politician as the most eloquent members of the Bull-dog Coterie, Sixth Ward, New York. "Wheer's tha off to?" inquires his opponent, as a disgusted Liberal angrily makes for the door. "I'm goin' to see if th' 'sylum's open," retorts Mr. Gladstone's disciple, delicately insinuating the appropriateness of that institution for the gentleman opposite. "Well,

want to answer it, and it 'ud ta-ake thee a' neet."

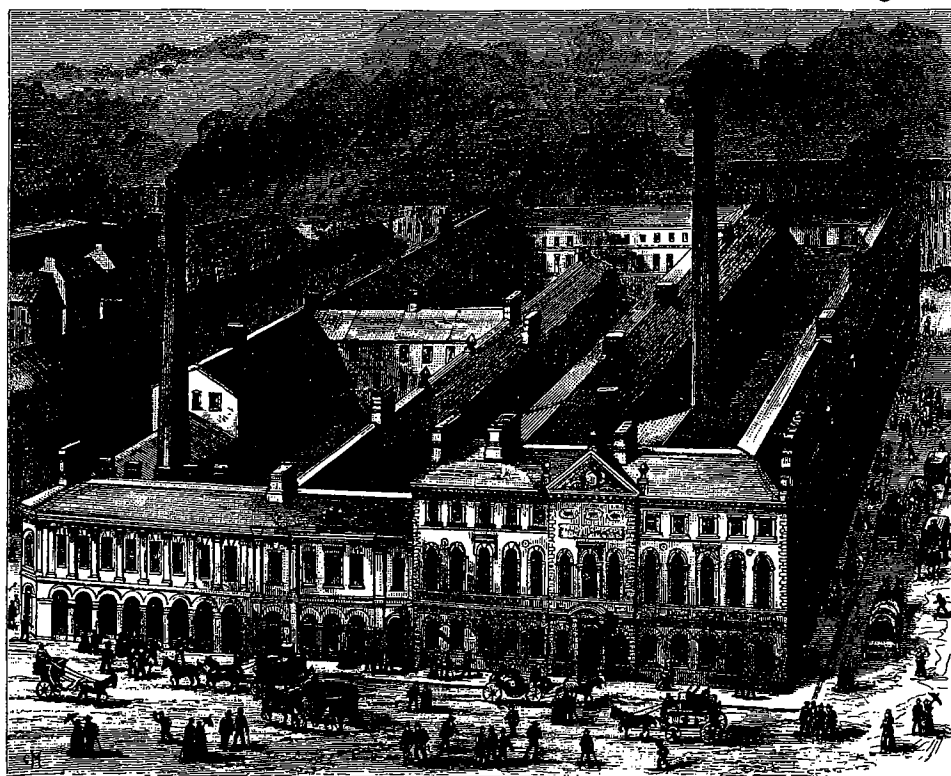
A survey of all the trades that are plied in Sheffield is impossible here, and we must confine our observations to the three largest, which are in steel manufactures, electro-plating, and cutlery. The last is first in history, extent, and importance, the value of its exports to the United States being about one million dollars annually. The oldest firm began its business one hundred and fifty years ago, with workshops in the rear of the dwellings of its two partners. It made only the plainest goods, but the steel in them was of the best quality, and it has now become an establishment employing over seventeen hundred mechanics, who produce weekly five thousand dozen table knives and forks, eighteen hundred pairs of carvers, sixteen hundred dozen pocket-knives, fourteen hundred dozen razors, and fifteen hundred dozen scissors. The quantity of finished cutlery exported by this one firm to the United States annually weighs more than twelve tons, and the intimacy engendered between Sheffield and the West by the traffic causes an American to be treated in that city with a little less wonderment than his advent excites in some other English provinces.



A SUNDAY EVENING.

they'll ta-ake thee in, anyway, I'll bet," loudly asserts the Conservative; and the audience, whether they believe it or not, are vastly tickled by the sally. "What argument canst th' make on it?" demands another Conservative of a Liberal, referring to a question that he has put. "A good enough one," is the reply, "but thou'd

The "pioneer establishment," as they would call it on the Pacific coast, was willingly opened for our inspection, and an intelligent artisan was appointed to act as our guide, who first took us into the ivory room, in which twenty-five tons of elephant tusks are made fit for handles every year. It is not a pleasant place by



WORKS AT SHEFFIELD.

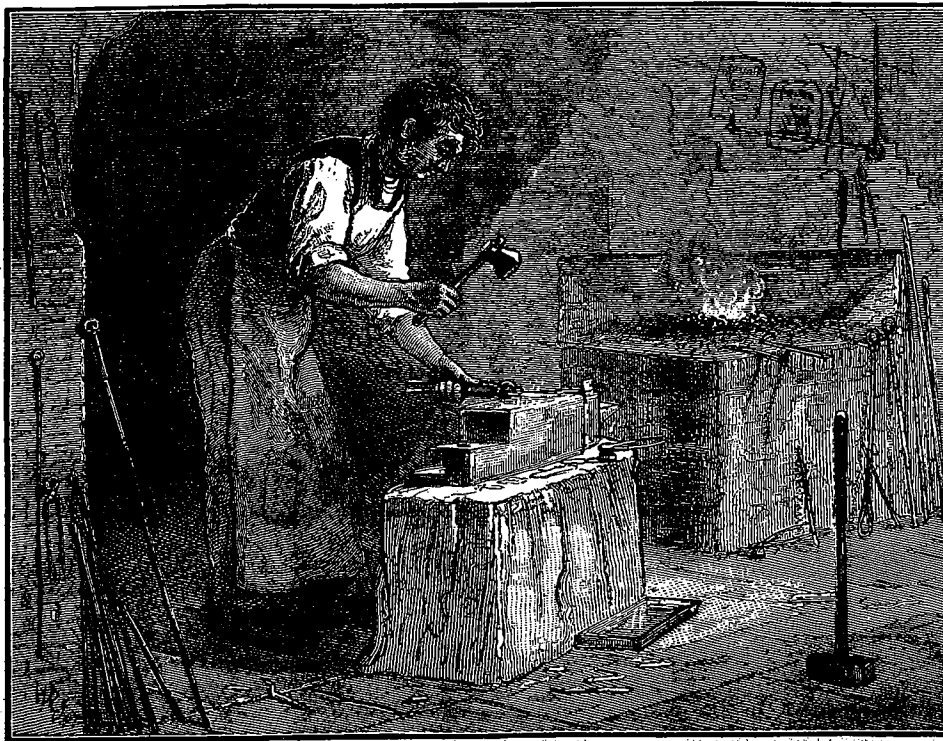
any means; the air is filled with white dust, which is thrown out like a spray from the saws, and the pale brown tusks piled upon the shelves have no reminiscence of the spicy Indies in their odor. The best quality is African, the second East Indian, and each tusk contains eight different qualities in itself, the yellowish part near the centre being most valuable. Every bit is utilized, and as the sawyer is paid according to the thrift he displays with his materials, he is sometimes so ingenious that not a scrap of waste remains. Besides the ivory, four hundred-weight of stag-horn is used every week for pocket-knives, and of this only the rough brown outside is available. The inside is put in solution for the gelatinous substances which it contains; the extraction is sold for the stiffening of cloth, and the residue is an excellent fertilizer. In the next department, which is in a court-yard, six men, each in a separate alcove, like mediæval alchemists, are bending over little forges, and here the blades are shaped out of purposeless-looking bars, under the tinkling rain of the hammers; the form is given, without the polish or edge of the finished article, and at this stage of the

manufacture the steel is a variable blue or purple, with rings and blots of rusty brown upon it. Every blade is branded with the individual mark of its maker, who is thus held accountable for its quality to his employers, and the same sign shows at the end of the day exactly how much work he has done, the labor in all the branches of cutlery being paid for by the piece. The blade made, it is welded, in the case of a dinner knife, to a piece of iron, which forms the "tang," or the part that is inserted in the handle, and the shoulder, or the projecting part between the handle and the blade. It is then heated to incandescence, and plunged perpendicularly into cold water, by which a sudden hardening is effected, and the gradual application of further heat afterward "tempers" it. The next process is grinding. We are led across the court-yard into a dismal workshop, which is so poorly lighted that for a few moments we can only discern the whirring bands on many wheels, an occasional white flash, or a shower of sparks, and when our sight becomes accustomed to the gloom, a fantastic scene is visible. From the back of the room to the front there are several separate

rows of grinding-stones, and these massive disks are revolving with a busy murmur, the power being communicated from the shafting near the ceiling by leather bands. The lower part of the stones touches a long vessel containing water, and by a technical peculiarity each stone is called a "trough." Immediately behind every stone there is a solid block of wood with a saddle in it, which forms the seat of the grinder, who, scarcely ever straightening himself, bends to his task, and accompanies the humming of the stone with a song or a whistle. The stone spins steadily and tirelessly; myriads of minute sparks fly out from it mixed with particles of sand that make the apartment misty, and the grinder gently draws the blade to and fro across it until the steel loses the dark color the forge gave it, and becomes lustrously white under the friction. Now and then he lifts the blade from the stone, and quickly runs his eye along its lambent surface, or touches the edge with his finger—an experiment repeated several times before he transfers it into other hands. After it has been applied to the rough sandstone, it is ground upon a wheel of hard blue-stone, next upon an emery wheel, and finally upon a

wheel of what our amiable guide very deliberately called "rhinoc'us" hide, the different kinds of friction leaving it sharp and brilliant.

The grinders work under an unusual system: the troughs and the tools belong to them, having been a heritage through an unknown number of generations, and they pay the employers seven shillings a week for the power supplied to each trough. Not every grinder is a proprietor, however. Some have no direct relations with the master-cutlers, being hired by their fellows, who adjust and settle their wages, and these agents are paid so much a dozen for the blades ground. The custom is old and incongruous; it has no apparent advantages to either party; but a Sheffield grinder inflexibly adheres to established usage, and resists every innovation. He suffers severely from a painful disease caused by the entrance of steel and stone dust into the lungs, and when fans were applied to create draughts that would suck the dust away, he objected to them because they would lengthen the average life of the trade, and lead to a surplus of labor! The grounds upon which a grinder stands have not often a more rational



FORGING THE BLADES OF CLASP-KNIVES.



FINISHING POCKET-KNIVES.

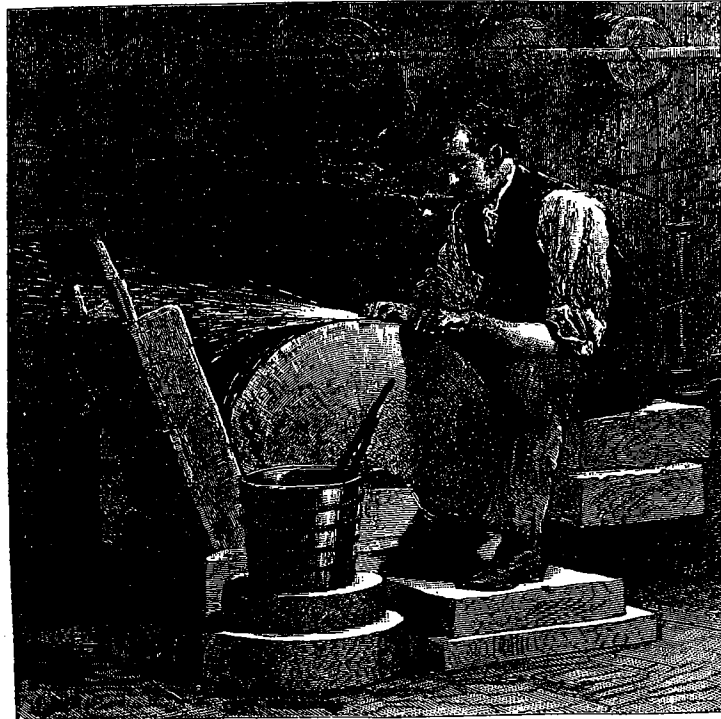
foundation. A very notable characteristic of his class, and one that has sprung in recent years from the dissemination of cheap literature and the facilities for travel and observation, is an independence of attitude and utterance which, however repugnant it may be to those followers of Mr. Ruskin whose watch-word is "Obey," contrasts refreshingly with the obsequiousness of former days.

Passing from the dark interior of the grinding-room, where each wheel has a sound of its own, one spluttering, another whirring, and another singing, we are led up and down stairways, along close corridors, and through interminable work-rooms, where men, women, and children are silently putting the various parts of the knives together; and the division of labor is so complete that one knife is handled, or "taken up," to use the local expression, about seventy times, by different artisans, from the moment the blade is forged until the instrument is finished and

smoothly wrapped up for market. At one long bench we find a party of men cutting files on the blades of pocket-knives with such dexterity that the threads, each less than the hundredth part of an inch in thickness, and exactly equidistant, are as true as if they were graven with the aid of a rule and a magnifying-glass, while the only implements used in the work are a chisel and a mallet, the mechanic being guided by his eye and an almost marvellous sensitiveness and accuracy of touch. The chisel is put upon the blade near the tip, and struck with the mallet, leaving the initial thread, which is followed by others until the flat steel becomes a perfect file. The men employed in this are fairly considered skilled workmen, but their earnings are small, and do not reach two pounds, or ten dollars, a week, under the most favorable circumstances. At another bench a row of men are putting together the parts of ivory, pearl, and buck-horn clasps, riveting them and jointing

them with a like quickness and sureness of touch that would not be suspected from the clumsiness of their fingers; and in a separate room more wheels are revolving, each operated by a man or a boy, who is putting the finishing polish on the blades. The custom previously mentioned of making some mark on a knife by which each of the various processes may be traced to the artisan who has done the work, and a check put upon carelessness or incapacity, is continued through all the branches, and

ever resource the work-people find outside the abstraction of their toil must be in the imagination. Here and there the benches have been decorated by scraps from illustrated newspapers, or the very chromatic portrait of some houri that has adorned a baking-powder box. An ascetic-looking old gentleman has a familiar hymn pasted on the wall before him, and the youth next to him, whose face indicates much pent-up levity, has a ballad under his eye, the easy rhyme having an



GRINDING THE BLADES OF POCKET-KNIVES.

when a knife passes into the packing-room or storehouse it bears a succinct history of itself from its shaping at the forge to its chastening on the polishing-wheel.

The hours are long—from seven in the morning until noon, when there is an intermission for a frugal dinner, and from one o'clock until six. We grow pitiful in contemplating their tedium. All the windows show an unvarying prospect of roofs and smoking chimneys, without a bit of blue sky or any silver lining to the clouds—a contraction of the horizon, a despondence of color, unspeakably monotonous. Conversation is not allowed, and what

inexhaustible fascination for him. The intelligence of some, their comfortableness of dress and well-taken-care-of appearance, are very noticeable, and yet more so is the interest evinced in politics by the men, who, between their bites at dinner, pore over the "leaders" of the morning papers with great eagerness.

From the cutlers—and, by-the-way, let us say that, technically, the cutler is the man who puts the knife together, to the exclusion from the name of grinders and others—from the cutlers, whose buildings loom up on an entire block, we traverse several little alleys and broad thorough-

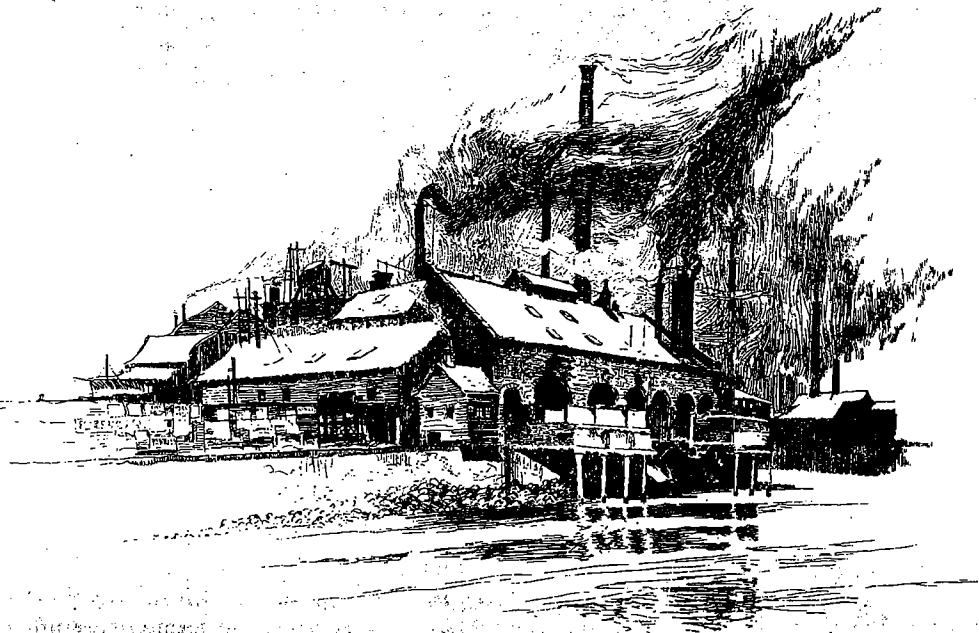
fares, with smoke-discolored houses and shops bordering them, until we stand before a massive gateway, with a tremendous knocker not less than five pounds in weight affixed to it, and in response to a laborious rat-tat and a word of explanation, we are admitted into a laboratory where Vulcan and Titan are partners, and the Cyclops, disembodied, re-appear in machines of modern devising; where feats of strength are performed every minute that make play of those recorded in the classic fables; where Sheffield is again seen in five thousand mechanics, clothed in fustian, begrimed, and translated, to all appearances, from decent humanity to a hybrid condition between that of gnomes and that of demons. Within these noisy precincts the materials of the toil are steel and iron, and the productions are armor plates, tools, and railway metals.

The space covered by the workshops is more than fourteen acres, subdivided by long avenues, and all over this vast area, which is piteously black and execrably dusty, the labor assumes heroic proportions, which elevate it and fill an observer with the almost obsolete sense of amazement—even an observer of nineteenth-century ubiquitousness, who has been everywhere, seen everything, and cares nothing about ordinary mechanical pro-

cesses. No wild vision of the supernatural, no Crystal Palace exhibition of pyrotechnics, no brilliant achievement of scenic art, could approach in weirdness, picturesqueness, and startling quality of effect the simple business of making Bessemer steel, which is a staple and everyday industry.

Our final exploration is through the work-rooms of an electro-plate factory—another scene, another act, and a new set of characters in Sheffield life. We watch the inferior metals in pale green and yellow baths assuming the whiteness of silver; we see shapeless pieces of metal transformed into beautiful dishes embossed with fruits, flowers, and other artistic designs, under the instantaneous pressure of an insensate machine; we are charmed by the exquisite skill of the repoussé workman, under whose hammer Nature is imitated in her loveliest forms.

Though Sheffield is itself so sombre, it is environed by some of the fairest scenery in England. Chatsworth and Beauchief Abbey are in its vicinity. Proceeding in any direction, the traveller is sure to find within a few miles of the town a picturesque charm in an embowered rivulet, a quaint old church, an ancient manor-house covered with ivy, a cool expanse of woodland, or a sweep of velvety pasturage.



A SHEFFIELD-FOUNDRY.