

## DIAMONDS AND DIAMOND CUTTING.

As it may be of interest to our readers to know something of the process of diamond cutting, we have selected an article from a late foreign paper, giving a description of the establishment erected by the celebrated diamond cutter, M. Coster, of Amsterdam, at the late Paris Exposition :-

"The first rough shaping of the more important facets of the brilliant is here seen performed by the workman, who operates on two diamonds at once, by bruising each against the other, angle against angle. The dust that falls from the stones is preserved for the subsequent processes of grinding and of polishing those facets that distinguish the many-sided 'brilliant' from the dull original crystal of diamond. It is used, mingled with oil, on a flat iron disk, set revolving with vast rapidity by steam-power; the stone being held upon this disk or wheel by a tool to which it is attached by a mass of a fusible metallic alloy, into which the stone is skilfully inserted. Skill of eye and hand, only attainable by great practice, is needed for this work. But a skill not less exact is needed for another process, which may here be seen in daily operation—the process of cleavage. The diamond, when a blow is struck on an edged tool placed parallel to one of the octahedral faces of the crystal, readily splits in that direction. But to recognize the precise direction on the complex and generally rounded form of the diamond crystal; to cut a little notch by means of a knife-edge of diamond formed of one of the slices cleaved from a crystal, and to cut that notch exactly at the right spot; then to plant the steel knife that is to split the diamond precisely in the right position; finally, with a smart blow to effect the cleavage, so as to separate neither too large nor too small a portion of the stone, these various steps in the process need great skill and judgment, and present to the observer the interesting spectacle which a handieraft dependent on experience of hand and eye always affords. But Mr. Coster's exhibition has other objects of interest. For the first time we may see here the diamond side by side with the minerals that accompany it in the river beds of Brazil; and there are even examples in which crystals of diamond are included within a mass of quartz-crystals, which have all the appearance of having been formed simultaneously with the deposit of the diamond.

"The different districts of Rio and of Bahia are thus represented, the former producing a confusedly crystallized sort of diamond termed boart, and the latter an opaque black variety; both these kinds being found associated with the crystallized diamonds used for jewelry. Though useful in the state of powder, the boart and black carbon are incapable of being cut as a jewel.

"In M. Coster's cases the sands and pebbles of each district are sorted and exhibited in association with the diamonds actually found in and picked out of them. From these, M. Des Cloiseaux, the French mineralogist, together with the reporter, selected crystals unknown before in Brazil, including tin-ore and the mineral brookite.

"M. Coster also exhibits a most choice and interesting collection of diamond crystals, and a series of cut diamonds representing the weight of a carat from the brilliant of a single carat, down through the various stages of two, of four, etc., to 1000 cut stones to the carat. The carat is a very ancient weight, slightly varying at different times and places, but in England equivalent to 3.17 troy grains. It consists of four carat grains, which are, therefore, equal each to 0.792 troy grains.

"M. Coster also shows some fine colored diamonds, including that greatest of rarities, a transcendent blue one; and he exhibited to the jury a rose-pink diamond of some 29 carats, endowed with the extraordinary property of becoming perfectly bleached by an exposure of some four minutes to ordinary daylight. It recovers its rose color at a gentle heat, and retains it for any length of time in darkness.

"The compact little establishment in the park of the Champ de Mars is an epitome, in very modest dimensions, of M. Coster's manufactory at Amsterdam, where some 316 lapidaries, assistants, and apprentices; some eighty-eight cutters and twenty-one splitters (for cleaving the crystals), form an aggregate of 425 workmen employed in this important industry, and receiving from £1000 to £1200 per week in wages. M. Coster has recently substituted the labor of women for that of men, training the hands of young girls to the delicate adjustments needed for the processes.

"When we consider that an average of some 176,000 carats of diamond (equivalent to 800 avoirdupois and nearly 1000 troy pounds), exclusive of a few parcels coming by private hands, has been the annual importation for the years 1862-6 inclusive, and that of these M. Coster has himself received nearly the half, the importance of his great establishment may be estimated. For the finer varieties of diamond, averaging in weight under half a carat, a price equivalent to £10 or £11 a carat is now paid; and the price has doubled since 1848, at which date £4 8s. or £5 would have purchased diamonds for which £10 or £11 have to be paid now. Thus, a diamond of 2 carats weight, worth then some £30, is now worth from £60 to £70, and sometimes more; while a perfect brilliant of 4 carats is now worth from £200 to £300. When Jeffries wrote his book on the diamond, a century and a half ago, a carat diamond, now worth about £17, was valued at £8. Such are the fluctuations of this singular trade.

"M. Coster has cut two out of the three great

existing brilliants—namely, the Koh-i-Noor, of some 103 carats, and the Star of the South, a Brazilian stone, slightly brown in hue, of 125 carats. The third, known as the Pitt or Regent diamond, the well-known crown jewel of France, weighs 135 carats, and was cut in the last century. For the cutting of the Star of the South Mr. Halphen, its owner, and by implication Mr. Coster, who really cut it, received the gold medal of 1862. Mr. Coster's exhibition in 1867 will bear out his reputation, and give it a new character; for, apart from its general interest for all, it possesses a sterling scientific value.

## SPRING. A FANTASY.

BY S. S. F.

WINTER was dying, the snows were melting; the mountain-streams bursting from their frozen prison and rushing to the meadows; and the gray old season lay stretched upon the ground, when a soft wind bore over the hills a bright-haired child called Spring; who, lifting the frozen crown from his brow, placed it on her own; but the moment it touched her sunny tresses the icicles were changed into a flowery wreath, and the sceptre she drew from his rigid grasp budded into a primrose fair and fragrant.

Gathering her mantle closely about her, and shivering as the cold Winds of her stormy kingdom of March swept around, Spring ascended her throne. She smiled; the snows melted away, and pale hyacinths budded from the earth; with her soft bustle she awakened the sleeping violets that opened their blue eyes with a look of timid wonder; she pressed a warm kiss on the cowslips, and they blushed with delight. Earth was beginning to glow beneath her smiles and caresses, when, one night, while she was gently reposing, the Ghost of Winter stalked abroad, and the winds of March uniting, they crushed the tender flowers beneath a storm of snow, and in the morning Spring owned nothing, save her crown and sceptre. Gazing on the ruin in despair and sorrow, she turned away, and, weeping, fled from this treacherous kingdom to fair, but fickle April. Here she was warmly greeted. The early crocus unfolded its golden leaves with a sunny smile; the Persian iris filled the air with fragrance; and the lofty trees shot forth buds of vivid green in honor of her arrival. Gay birds sprang from bough to bough, with notes of cheery welcome; whilst the orchards veiled their naked limbs in clouds of snowy blossoms.

Happy Spring! her life was a stream of sunshine; her laughter was heard in the brooklet; and glimpses of her exquisite beauty were seen in the delicate flowers that blossomed beneath her smile. But danger lurked behind this charming veil. One evening a North

Wind of Winter, passing through the kingdom, on his way around the world, approached the Capitol. He was struck by the loveliness of the scene, and paused to listen to the birds that warbled amid the foliage. They sang praises of Queen Spring, and just then a glimpse of the youthful sovereign herself flashed gloriously upon him. She was reclining on a bank of violets, which, trembling with love, perfumed the light Zephyrs floating above. Her eyes were closed in slumber; and her long tresses of sunny gold, escaping from a crown of royal lilies, lay like showers of light over the ground. A dark scowl swept over the countenance of the Wind. He hated Spring, for she had banished him her domain, and in his breast he darkly brooded over the hope of revenge. With this design, he told strange stories to the Zephyrs, and her principal subjects, of her cruelty and deceit. He said "she had murdered King Winter, that kind and excellent monarch, and in his dying hour had mocked him with his fate; that when she first began her reign in March, she was pleasant and yielding, but soon lifted her veil from her tyranny and oppression; this the brave Winds would not endure; they had rebelled, and forced her from the kingdom," and, exhorting them to do the same, he swept away over the tender green fields with a storm of cutting hail.

Spring was aroused from her slumbers by the murmurs of her subject Zephyrs. She raised herself, and, with bewildered gaze, looked upon the fickle gusts of tearful passion, that ever-and-anon dashed over their cloudy brows and threatening aspects. With gentle sweetness she reasoned and soothed them into smiles. But, no sooner had she cleared away the darkness of one fear or suspicion, and a glance of sunny peace appeared, than another cloud arose, and overshadowed the sky of her happiness. At length, wearied out by their changeful tempers, she glided into her adjoining Province—sunny, lovely, flowery May. A more magically beautiful morning never smiled through roses and mist, upon a poet's mind, than that which greeted her entrance.

Aurora, floating upward in soft radiance, was just scaring away silent Night, who, gathering her wide-spread mantle, glittering with gems, about her, glided adown the western hills. Could paradise have been more exquisite than the garden into which the fair Season was ushered? Roses, just waking from dewy dreams, were unclosing their red lips to breathe the morning air; deep-white lilies were bending their graceful heads to pour the perfumed dew from their petals; light, feathery vines, festooned from bough to bough; stary jessamines, peeping from dark foliage; and the sleepy tulips, with their gorgeous leaves still folded in slumber—all glistening and heavy with dew. Whilst gazing on the fairy scene in silent rapture, she beheld a train of mortal maidens