bubbles of metal, and supplies any letters that are deficient or imperfect in the cast.

One of the results of printing was Lithography—the *secret* that grease and water will not combine might never have been turned to account but for Guttenburgh, Faust, and Caxton. Lithography, the art of printing from stone, was invented at Munich towards the end of the eighteenth century. Peter Senefelder was an actor at the Theatre Royal, but he did not intend his son Alois to paint his face and don sock or buskin. No! he was to be a lawyer; he all the while ardently panting to emulate all the actors of the age—feeling himself a youthful Roscius, that only wanted to be seen to be appreciated. When his father died he cut the law, and boldly plunged into the troubled waters of theatrical life. For two years he experienced all the miseries of a life of green-room vicissitudes, and then took up with the no less uncertain profession of authorship. As an author, he was necessarily brought into connection with printers, and the sight of type and hand-press, set him yearning to possess the same himself. It set his mental machinery in motion, and he tried and failed to obtain money enough to purchase a press. Baffled by the 'woeful want a sillar' he resorted to various expedients, and at last hit upon an art which at all events immortalized his name. Premising that among the materials employed in his experiments were polished slabs of Kellhelm stone, and that on these he had endeavoured to etch his composition, after the manner of copper-plate engraving, we may relate the discovery in his own words:—

"I had just succeeded in my little laboratory in polishing a stone-plate, which I had intended to cover with etching ground, in order to continue my exercises in writing backwards, when my mother entered the room, and desired me to write her a bill for the washerwoman, who was waiting for the linen. I happened not to have even the smallest slip of paper at hand, as my little stock of paper had been entirely exhausted by taking proof impressions from the stones; nor was there even a drop of ink in the inkstand. As the matter would not admit of

delay, and we had nobody in the house to send for a supply of the deficient materials, I resolved to write the list with my ink prepared with wax, soap, and lamp-black, on the stone which I had just polished, and from which I could copy it at leisure. Some time after this, I was going to wipe this writing from the stone, when the idea all at once struck me to try what would be the effect of such a writing with my prepared ink, if I were to bite in the stone with aquafortis; and whether, perhaps, it might not be possible to apply printing ink to it, in the same way as to wood engravings, and to take impressions from it."

Subsequent experiments still further convinced him of the practicability of printing from stone, and we may well imagine that he was elated by his discovery.

Unable, from the want of pecuniary resources, to pursue his discovery, or to obtain any advantage from it, Senefelder, tempted by a bounty of two hundred florins, determined to enlist as a private soldier in the artillery, with the enthusiastic expectation that this small sum might ultimately enable him to bring his invention into practice, and secure to himself an honourable competency and reputation. In this resolution, however, he was disappointed, for on arriving at Ingolstadt to join his regiment, the commander of it discovered that he was not a native of Bavaria, and, therefore, according to the order of the Elector, could not serve in the army without a special licence.

On Senefelder's return to Munich, chance threw in his way Mr. Gleissner, a musician of the Elector's band, to whom he had formerly been known, and who was about to publish some music. Senefelder communicated to him his invention of printing from stone, and it was soon determined that by this new method Gleissner's music should be given to the world. The composing, writing on stone, and printing of twelve songs was accomplished in less than a fortnight, and one hundred and twenty copies taken at the expense of about thirty florins. In a short time the entire impression was sold for one hundred florins, thus leaving a profit of seventy florins, or rather more than two hundred per cent.

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