

and second degree, still felt some remains of the symptoms of the disease. Such patients, as had any critical abscesses, were saved by this tribute only; but others, who escaped the mortality of this dangerous poison, carried about with them for several months, and still feel, its terrible effects: for to the usual weakness of convalescents were joined palpitations of the heart; a little of the painful lassitude in the joints, which was a sign of the first attack of the disease; a slight pain in the head, but almost constant; an uncertain pulse; and, upon the lessening or cessation of these complaints, they were replaced by wandering pains in the hypochondriacs, swimings in the head, melancholy, and a remarkable disposition to fear, being the remains of what constituted one of the characteristics of the disease.

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XVI. *An Account of the Death of Mr. George William Richman, Professor of experimental Philosophy, a Member of the Imperial Academy of Sciences at Peterf-burg. Translated from the High-Dutch.*

Read March 13, 1755. **N**obody can be ignorant, who has perused the works of the Academy at Peterfburgh, or even only the public papers, with what application the late Professor Richman had studied, among other branches of philosophy, that of the electricity of bodies in general, and that of thunder-

der-clouds in particular. The discoveries of the demonstrators of electricity, by which they are enabled, not only to determine its degrees of electrical force, which is produced by the rotation and friction of a glass ball, but likewise those, that are emitted by thunder-clouds, are peculiar to him. And it must be said, to his honour, that he has made as many discoveries on this subject, as, I will venture to say, any naturalist has ; and of which the learned world will be made more sensible, by reading his treatise, when it comes from the press, which he intended to have read, the 6th of September, this year 1753, at a publick meeting of the members of the academy. In order therefore to demonstrate what he might advance in this discourse with the greater certainty, he neglected no opportunity, upon the appearance of a thunder-cloud, diligently to discover its strength. Bars were standing for this purpose always upon the roof of the house. These received the electrical power of the clouds, and imparted it to certain chains fastened to them ; by which it was conducted into one of his rooms, where his apparatus was. He was attending the usual meeting of the Academy the 26th of July 1753, a little before noon, when it thundered at a pretty distance, the sky being clear, and the sun shining. Upon this he hastened home, in hopes of confirming his former observations, or possibly enabling himself to make new ones. The engraver Sokolow, who had the care of his future treatise, accompanied him, to make himself the better acquainted with the chief circumstances of the electrical experiment, in order to be thereby enabled to represent it more justly on a copper-

copper-plate. Mr. Richman carried the engraver immediately to his apparatus, taking notice of the degree of electricity on his bar, which was then only four; and by which it appeared, that his bar had received very little from the thunder. He described to Mr. Sokolow the dangerous consequences, which would attend the electrical power being magnified to the 45th, or more degrees of his expositor. In the mean time the misfortune happened, about half an hour after noon, which cost Professor Richman his life. A thick cloud, that came from the north-east, and seemed to float very low in the air, was taken notice of by people walking the street; and these affirm, that they could plainly see, upon the subsequent flash of lightning, and peal of thunder, a quantity of vaporous matter issue from it, which diffused itself in the circumjacent space. It was such a thunder-clap, as has hardly been remembered at Petersburg. The serene weather continued afterwards just as before. In those places, which had not been obscured by the thunder-cloud, the sun was as powerful as ever, and a very little shower of rain only followed the clap. An English captain observed, that as the wind had been till then easterly, it, not long before the thunder, veered about to westward, but immediately after the stroke it returned to its former point, east. By this it appears, in what manner the inflammation of the electrical particles followed so quickly, the wind driving it against another cloud, not so pregnant with that combustible matter. The neighbours declare, that they saw through their windows a vapour, in different rays, dart along the whole extent of the street; and that  
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where-ever it touched the ground, it emitted everywhere sparks; which is not incredible; for besides, there were people, who, walking along between these rays of vapour, were quite stunned, and some beat to the ground, but they speedily recovered themselves.

A centinel in the Great Perspective \*, not far from Mr. Richman's dwelling, which stands at the corner of the said Perspective, was cast some paces from his centry-box, but without receiving any injury. It is not therefore to be doubted, but that this very thunder-cloud, or its electrical discharge, must have struck the iron bars, which were upon Mr. Richman's house-top; by which a great part of the electric force was conducted, by means of the chains, to his electrical expositor; and thus it could not fail of having the melancholy effect, the parallel of which has not been known. According to the relation of the engraver Sokolow, Mr. Richman inclined his head towards the expositor, to observe what degree of force it would have; and whilst he stood in that bent posture, a great white and bluish fire appeared between the electrical expositor and Mr. Richman's head. At the same time arose a sort of stream, or vapour, which intirely numbed the engraver, and made him sink down upon the ground; so that he cannot remember to have heard the loud thunder-clap. The iron ruler belonging to the expositor, which hung perpendicular, as it received all the force from the bars and chains, cast from it a thread, which was fix'd to its top, and drove it upwards towards the expositor. That this ruler might point out the de-

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\* Probably a street so called.

grees of strength, I take it, that for its more powerful operation, it stood with its lower end in a glass vessel, which was filled with brass filings. This ruler hanging right, a globular flame hath been always produced, as well by artificial electricity as that of the clouds, which may be denominated natural electricity. This being now stopped, by the filings and glass vessel, from taking its direction downwards, seems to have expanded itself round-about the ruler, and by those bodies, incapable of electricity, to have been carried on towards Mr. Richman. And this is further confirmed, because they afterwards found the vessel broken in pieces, and the filings scattered about. The particulars, which happened to Mr. Richman, Mr. Sokolow is ignorant of. As soon as he had recovered his senses, he got up, and ran out of the house, acquainting every one, whom he met in the street, that the thunder had struck into Mr. Richman's house. On the other side, as soon as Mrs. Richman heard the very loud stroke of thunder, she came hastening into the chamber, in which she conjectured she should see the bad consequences. She found her husband past sensation, sitting upon a chest, which happened to be placed behind him, and leaning against the wall; which situation must have been occasioned by his falling back upon receiving the electrical blow. He was no sooner struck, but killed. There were not the least appearances of life. A sulphureous smell, not unlike that which is caused by the explosion of gun-powder, diffused itself through the whole house. Some servants, who were hard by in the kitchen, felt its effects, since they were thereby quite stupified. The electrical expositor stood upon a low

beaufet, upon which was likewise placed a china bowl, that was crack'd: and there was moreover such a shaking in the house, that the shock even stopp'd the movement of an English clock, or pendulum, which was in an adjoining room. At first it was not known whether the windows of Mr. Richman's chamber had been shut, or open; but it is recollected, that, in preparing the apparatus, it is never opened: it would be moreover impracticable, lest the thread of the expofitor should receive any motion from the wind or air, which would rush in. There was no other inflammation happened in the house. But we have found another effect of the force of electricity, or of thunder-bolts, discoverable by the door-posts of the house; for they were rent afunder length-ways, and the door, together with that part of the posts, so torn away, twirled into the porch. The reason of which appears to be, because one of the above-mentioned chains, that were carried from the bars at the house-top to the expofitor, passed very near them: and the kitchen-door, being at a little distance off, had a splinter torn out, and dashed against a stair-case, that went towards the top of the house; so that part of the electrical matter seems to have taken its course this way, but without doing any more damage. All the neighbourhood, I may indeed say the whole island, was immediately in an uproar, partly by the relation of the engraver and the centinels, and partly by the servants being sent directly to the friends and acquaintance of the deceased. There never was a report of a misfortune so speedily spread abroad in this city, as this was: every one ran thither, altho' they

they had connexion with, nor any manner of acquaintance in the house. The upper Maitre de Police was presently there, and placed a guard, to prevent the concourse of the populace, which was relieved by another, the same day, sent from the Academy. They opened a vein of the breathless body twice, but no blood followed. They endeavoured to recover sensation by violent chafing, but in vain. Upon turning the corpse topsy-turvy, during the rubbing, an inconsiderable quantity of blood fell out of the mouth. There appeared a red spot on the forehead, from which spirted some drops of blood through the pores, without wounding the skin. The shoe belonging to the left foot was burst open. Uncovering the foot at that place, they found a blue mark, by which it is concluded, that the electrical force of the thunder having forced into the head, made its way out again at the foot. Upon the body, particularly on the left side, were several red and blue spots, resembling leather, shrunk by being burnt. Many more blue spots were afterwards visible over the whole body, and in particular on the back. That upon the forehead changed to a brownish-red. The hair of his head was not singed, notwithstanding the spot touched some of it. As for the wig, the deceased had taken it off. In the place, where the shoe was unript, the stocking was intire; as was his coat every-where, the waistcoat being only singed on the fore-flap, where it joined the hinder. But there appeared on the back of the engraver's coat long narrow streaks, as if red-hot wires had burnt off the nap. We conjecture it was occasioned by the thread hanging in the chamber, by the chains of the expo-

sitor ; and that some of it might fall upon him ; but we do not assert it positively ; for we are more certain of this, that the people in the house, who first of all went thither, took down the chains, thread, and other things belonging to the apparatus, immediately after. When the body was opened the next day, twenty-four hours afterwards, the cranium was very intire, having no fissure or cross-opening ; the brain as sound as possibly it could ; the transparent pellicles of the wind-wipe were excessively tender, gave way, and rent easily. There was some extravasated blood in it, as likewise in the cavities below the lungs ; those by the breast being quite sound, and and not damaged, but those towards the back of a brownish black colour, and filled with more of the above blood ; otherwise none of the entrails were touched : the throat, glands, and the thin intestines, were all inflamed. The singed leather-colour'd spots penetrated the skin only. In short, although one could trace out all the consequences of an instantaneous stroke throughout the whole body, yet many of them have not appeared to happen to others struck by thunder, when they have been examined. Should not one therefore be led to conclude, that the electrical force, that occasioned Mr. Richman's death, must have been of a different substance than the common thunder-bolt ? That it was much more subtle, is obvious, because it left so few visible traces in the body, which it penetrated. Twice twenty-four hours being elapsed, the body was so far corrupted, that it was with difficulty they got it in a coffin. He was buried the 29th, followed by a considerable train of mourners. Those, who had the  
pleasure



pleasure to be more intimately acquainted with him, are in doubt, which they should give the preference to, his knowledge and assiduity, or his piety and sincerity, and his good qualities in general; and which is most to be lamented, the loss, which the Academy has sustained, or that, which his family must suffer. He was born the 11th of July, 1711, at Pernau, after the decease of his father, Mr. William Richman, treasurer of the king of Sweden, who was carried off by the plague, at the close of the year 1710. Having laid the foundation of his learning at the Gymnasium at Revel, he prosecuted his studies at the Universities of Halle and Iena, where he always made the mathematics and philosophy the principal objects of them. He was made a member of the Imperial Academy in the year 1735; extraordinary Professor in 1741; and at last, in 1745, ordinary Professor of experimental philosophy. In his later years he married his present disconsolate widow, by whom he has had six children, three of whom died before him, but two sons and a daughter survive him.

XVII. *An Account of a Roman Inscription found at Malton in Yorkshire, in the Year 1753. By John Ward, LL. D. Rhet. Prof. Gresh. and V. P. R. S.*

Read March 20, 1755. **T**HIS inscription was dug up in the Pye Pits, over against the lodge at Malton, a town situated on the river Derwent, in the