WALKER'S PATENT HYDRAULIC ENGINE.—On Saturday, the 24th inst., a number of scientific gentleman, and proprietors of estates in the colonies and at home, assembled in the Wharf-road, City-road, to witness the performance of an hydraulic engine, just completed by Mr. Walker, for the estate of Messrs. Denison, in Berbice. The machine consists of a table, upon which are mounted two steam cylinders, each 11 inches in diameter, and immediately under them are placed two water cylinders 2 feet in diameter. From the cross-heads of the steam piston rods, connecting rods pass down, and are bolted to the platform upon which the water rams, or pistons, are mounted. The water cylinders are open at the bottom, and are immersed in a cast iron well, fitted with sluices, to admit the internal water from the drains, or the external water from the river, so as to be equally available for the purposes of draining or of irrigation. The water cylinders terminate at the upper part in a capacious valve box, communicating with the delivery main, which is also furnished with sluices for delivering the water raised, either inward or outward, according as the engine is employed at the time, for draining, or otherwise. The valves on the water cylinders and pistons are of a novel and excellent construction, and consist of a large number of rolled tubes, which lie in circular seatings, rising and falling within guides, which limit their action. By means of this arrangement, a large and very free water-way is afforded for the passage of the water, while the action of the valve is entirely free from anything like a blow or jar, even when working at a high velocity. The steam cylinders are single acting, the steam being admitted alternately beneath the pistons by a side-valve placed between them, and worked by an eccentric motion on the crank shaft which connects the two steam pistons, and carries a fly wheel, to regulate the action of the machine. After leaving the cylinders, the waste steam enters a hot water box (tubular in its construction,) where the water raised by the cold water pump is made to boil, and in that state sent into the boiler. The engine was constructed for a lift of 8 feet, and with steam of 35 lbs. on the inch, making 70 revolutions per minute—it raised 6,000 gallons of water per minute. This is the second engine completed by Mr. Walker for the West Indies, and the performance of both have given the most unqualified satisfaction to the numerous parties who had an opportunity of seeing them in action. As these engines *throw up* the water—not lift it—the ordinary mode of computing the performance of the engine (by its capacity multiplied by the speed) is inapplicable. At the speed stated, this mode of calculating gave barely half the quantity of water actually raised by the engine, and at an increased speed the disproportion would be much greater. Hydraulic engines upon this principle have been put up by Mr. Walker for the Parliamentary Commissioners for draining in Somersetshire, Norfolk, and in Lincolnshire. At the estate of Mr. Boult, Rendham, in Norfolk, a large tract of land is this year growing the very finest corn, that had never before been cultivated, from the impossibility of draining it by the means heretofore employed for that purpose. By Mr. Walker's engine (with greatly diminished power) this has been effectually accomplished. The gentlemen connected with estates in the West Indies have watched the completion of these machines with great anxiety, and they are now satisfied that these engines will entirely avert the only two evils of any magnitude they have now to contend with—alternate floods and droughts. Mr. Walker's engine is exceedingly compact—occupying a space of less than 4 feet square, and is so simple that any labourer can be taught to manage it in half an hour. The superiority of Mr. Walker's patent engine over the ordinary pump has been most satisfactorily established at Woolwich Dockyard. The caisson there was formerly emptied by means of a pair of very excellent 10-inch pumps, fitted up in the best manner by Messrs. Rennie. With these it took 30 men, working in gangs of 15, and relieving each other every 10 minutes, three hours and a half to empty the caisson. By Walker's engine, 14 men, working in gangs of 7, and changing every 15 minutes, emptied the caisson in one hour and a quarter, and have, upon recent occasions, done it in less, without being fatigued. Now that agriculturists are becoming convinced of the vast importance of effectual drainage, and every mechanical expedient for facilitating the object is received with thankfulness, there can be no doubt that the value of Mr. Walker's invention, as a simple, powerful, and economical mode of raising large quantities of water, will be duly appreciated.—*Mining Journal.*

CROPS IN EGYPT.—One who has examined the magnificent specimens of grain now grown in England is exceedingly disappointed in examining that for which Egypt for thirty centuries has been famous. I collected specimens in 1840; it is exceedingly prolific on the root, but not more so than grain at home thinly sown on rich soil. The stalks of the barley are seldom above eighteen or twenty inches long, each root produces from six to twenty-four stems, fifteen being about the average; there are six rows of grain or pickles on each stalk, each row containing on an average about ten grains, so that the return from the seed is from six hundred to nine hundred. The roots are from six to fourteen inches from each other, and I do not believe that an acre of land in Egypt will yield nearly so much grain by measure or weight as a similar surface in England, both under present cultivation. The barley itself when rubbed out would be little short of unsaleable in average seasons at home, so thin, husky, and poor it was. It is trampled out of the straw by oxen and cleared of chaff by the wind.—*Dr. Buist's Overland Journey.*