

a motion too accelerated, corrected by additional wheels, but throughout the complexity such accurate calculations were the basis of his work, that when finished and tried it was perfectly correct without alteration. His inventive talents are unquestionable. He has made a machine for cutting watch pinions, a deepening tool, a machine for cutting and finishing watch-wheel teeth, of his own invention, a clock-barrel and fusee engine, made without ever seeing any thing of the kind. He made a clock, the teeth of the wheels cut with a hack saw, and the balance with a half-round file. He has made an electrical machine, and a powerful horse-shoe magnet. Upon being shown by Mr. Munnings a common barrow-drill, the delivery by a notched cylinder, he invented and wrought an absolutely new delivery; a brass cylinder, with holes, having moveable plugs governed by springs which clear the holes or cups, throwing out the seed of any size with great accuracy, and not liking the application of the spring on the outside of the cylinder, reversed the whole, and in a second, now making, placed them most ingeniously within it." Shortly after Young's notice of him was written, Jex removed to Letheringsett, near Holt, where he worked as a common blacksmith till within the last thirty years. Since that time he has employed workmen in the practical part of his business, but he continued till his decease to live in the house adjoining the blacksmith's shop. The first watch ever constructed by Jex was made after he had settled at Letheringsett, for his friend the Rev. T. Munnings of Gorget, near Dereham. Every part of this watch, including the silver face, and every tool employed in its construction, were of Jex's own making. One of the greatest efforts of Jex's inventive powers was the construction of a gold chronometer, with what is technically termed a "detached escapement"—the principle of which has since been so successfully applied by Arnold and Earnshaw. Jex turned the jewels himself, made the cases, the chain, the mainspring, and indeed every part of the watch, except the dial. The very instruments with which he executed this wonderful piece of mechanism were of his own workmanship. It is only by watchmakers themselves that this triumph of skill can be adequately appreciated. They know that no single man is ever employed to make a complete chronometer, but that different parts of the mechanism are entrusted to different hands, and that many are employed upon a single watch. This watch is now in the possession of Mr. Blakeley, of Norwich. Such was Jex's thirst for information, and such was his resolution to clear away every obstacle which impeded his progress, that, wishing to read some French works on, Horology, he mastered unassisted, the French language, when about sixty years of age! He then read the books in question, but found that they contained nothing which was new to him; he having become thoroughly acquainted with the subject by previous study of English authors. Another of Jex's inventions was a lathe of extraordinary power and ingenuity, which remained in his possession until his death. By means of his lathe, he was enabled to cut the teeth of wheels mathematically correct into any number, even or odd, up to 1,000, by means of a dividing plate. He also constructed a lathe on a minute scale for turning diamonds, which is very complicated in its structure. He likewise invented an air-tight furnace door for his own greenhouse, so constructed that the fire would keep lighted from Saturday night till Monday morning, thus obviating the necessity of attending to it on Sunday. About ten years ago he invented a method of opening greenhouse windows to any required width, and so fastened that the wind has no power over them. Jex was also an iron and brass founder, a glass blower, a maker of mathematical instruments, barometers, thermometers, gun barrels, air guns, &c. Jex understood electricity, galvanism, electro-magnetism, &c., and had a thorough knowledge of chemistry as far as the metals are concerned. Amongst other sciences, Jex understood astronomy, and could calculate the time by the fixed stars. In taking astronomical observations, he was accustomed to make use

of his own door posts and a chimney opposite. He made telescopes and metallic reflectors, which are universally acknowledged to be extremely difficult of construction. His disposition was shy and retiring, but whenever he met with any whose tastes were similar to his own, he would converse for hours with the greatest delight on any subject connected with the arts and sciences. He was a man of the strictest integrity, and of unimpeachable veracity. He was entirely destitute of the love of money, and sought out truth for its own sake, and with no view to any personal gain. Such an example is rare indeed in this grasping and selfish age. He was kind in his manner to the poor, and rarely sent a mendicant away without relief. In 1845, Jex had a stroke of paralysis, from the effects of which he never entirely recovered. His intellect gradually lost much of its original power, and the last year or two especially, a very marked alteration was perceptible. He was again attacked with paralysis in November last, and his death took place on the 5th of January last. His remains are interred in Letheringsett churchyard.

### Answers to Correspondents.

**G. S. ORIENTAL SAYINGS.** Our correspondent is desirous to know if the oriental sayings which have appeared in the Herald, are prepared for it, or if they are copied from some other work in the form in which they appear. We have only to say in reply, that the sayings are translated from the Talmud, the Mishnah, and other Oriental works, expressly for the Canadian Family Herald, by the person who signs, R. Arrangements have been made so that one may appear in each number. A series of stories for the introductory part have also been prepared, so that, at all events, the Herald will present somewhat the aspect of freshness.

### Literary Notices.

**The ART JOURNAL.** New York, George Virtue. Toronto, H. Rogers.

To turn over the pages of each succeeding number of the Art Journal is one of the most pleasing operations in which we engage. It is got up with the greatest taste, and displays a perfection in art which we find in no other periodical. The efforts made during the past year to furnish a succession of sketches of the great Exhibition were such as to entitle the conductors of the Journal to the highest meed of gratitude. The Art Journal stands decidedly far removed from any other periodical, occupying in silent majesty a higher niche in the "Palace of Art," than all others,—honourably secured for it by the unceasing labours of its conductors. The engravings in this number are, "Yorick and the Grise"—engraved by H. Bourne, from the Picture by G. S. Newton, R. A., in the Vernon Gallery. "The Stolen Bow"—Engraved by P. Lightfoot, from the Picture by W. Hilton, R. A. in the Vernon Gallery. "The Protecting Angel,"—engraved by Edwin Roffe, from the Bas-relief by Ernst Rietschel. "Examples of the Artists of Germany." "Selections from the Portfolio of Moritz Retzsch. It is unnecessary to say that these are most exquisite specimens of engraving. This number contains the second part of Mrs. Merrifield's Essay on the Harmony of Colours, in its application to Ladies' Dress also an essay on the application of Science to the Fine and Useful arts, and a sketch of the progress of Art Manufacture, with a variety of neatly executed specimens.

### Toronto Mechanics' Institute.

On the evenings of the 13th and 27th ult. the Rev. Professor Lillie lectured in the Mechanics' Institute on the "Growth and Prospects of Canada." The audience was large and respectable, and highly delighted with the interesting details. The lecturer said—"The population of Canada, at the time of its surrender to Britain in 1760, was between 66,000 to 82,275, exclusive of Indians. With the exception of a few trading posts, this population was confined to the lower part of the Province. After 1770, U. E. Loyalists coming in from New Jersey and Pennsylvania increased it somewhat. In 1791, the white population of Upper Canada was under 50,000, in 1811, it was 77,000, according to the statement of the Board of Statistics. Hence it is only forty years since it can be said to have begun to grow, if so much. By 1821 the population reached 151,067, nearly double in thirteen years, in 1831 it was 320,623—double, with 18,492 over; in 1850, when it was 791,000, it was more than ten times its number in 1811; over five times its number in 1825. Its growth during the last half century was shown by statistical returns to have been in a ratio about three times that of the Free States. By statistical returns it was shown that Canada West, taken as a whole, has been growing for the last forty years at a rate about equal to that of Ohio, Michigan, and Illinois conjoined, for the last twenty at a rate somewhat over theirs. It was remarked, that while the growth shown to have taken place in Canada West was on the country as a whole, that of the Western States was at the expense of the other States of the Union, between which and them the disproportion was very great; to the extent of the American portion of it the immigration to the Western States is but a removal from one part of the Union to another, not an increase to its inhabitants. By way of illustration to the effect of selecting portions of the States, as is done in the case of the West, and drawing general inferences from them, the Home and Gore Districts were selected out of Upper Canada, and their rate of growth shown to exceed that of the Western States. Indiana contains now a population of 1,774 times what it was in 1800, while the Home District contains over 500 times its number of inhabitants in 1799—which was in that year 224; in 1850, 112,936. Though in different parts of the country there have been differences in the rate of growth, there has been on a whole a gratifying uniformity, examples have been adduced illustrative of this fact. Coincident with this rapid growth in population, a corresponding advance has been taking place in the quantities of land under cultivation, agricultural products, stock, &c., and in the value of land, which was illustrated by statistical returns. A comparison of assessed values in the State of New York and Upper Canada respectively, for 1848 brought out the fact that, supposing the principle of the valuation the same, our neighbours of the Empire State have, with a population over four times ours, property under five times ours—New York city included. The growth of the country was next illustrated by the contrast it presents now to the published descriptions of travellers, comparatively recent. What they described as wildness, is filled with towns and villages—many of them handsome, and not a few of them large and wealthy. The growth of a number of these—among them Toronto, Hamilton, Dundas, Brantford, London, Guelph, Belleville, Brockville, Kingston—was viewed—their present population and that of earlier periods being given. Examples of the rise of property in some of these towns were likewise given. In its trade, the growth of Upper Canada is, as proved by the comparison of the exports and imports of different periods, quite equal to its advance in other respects.—Great progress has also been made in regard to the convenience of life, as was manifested by a comparison of means of conveyance—steamboats and roads at different periods, with the increase of postal arrangements and the facilities afforded