## Science MAAAS

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carry a line of goods known as "druggists' sundries" and 'patent medicines." These, and more especially the latter, he would give up if he could, but the line of competition is so great and the public still expect the pharmacist to carry any-andeverything to suit their convenience, that it seems only practicable to a very few to abandon these in their business. The public also expect the pharmacist to know something of everything, and whatever it be, whether ills or troubles or discomforts of any kind, they run to him. I remember, when attending college, one of the professors, who was a practising pharmacist for a number of years in one of the best localities in a large city, telling us that one night he was hastily summoned by a neighbor to his house, where, in the midst of a splendid reception, the gas had suddenly gone out, and, not knowing what to do, they sent for the pharmicist. He went, and being of a practical mind and true to the instincts of his discomforted neighbor, he remedied the trouble. This simply illustrates the very close relations of the pharmacist to the public.

Now, as soon as the public will expect the pharmacist to deal in medicines only and all other articles related to the art of medicine, then the pharmacist as a business man (which he must be) will confine himself to the labors of his profession. And as soon as he can confine himself solely to the art of pharmacy as taught in our colleges, there will be no question of an extended curriculum of studies, as complete as that of any institution of learning. Then we shall have laboratories fully equipped in the particular kind of analytical and chemical apparatus which he needs for the assay of drugs and in their examination for purity. Likewise will the course in microscopical work be so extended that the pharmacist will make such analyses, for the busy physician, as the examination of urinary sediments and other discharges, such as sputum for tubercle-bacilli, etc. Indeed, it is in these two fields that the advanced work in pharmacy is tending, and accurate results will only be attained by thorough instruction in chemical and microscopical manipulation. There must be such a blending of chemical and botanical instruction that the pharmacist, while not a specialist as a chemist or a botanist, yet indeed is a specialist with regards to the practical application of these sciences as an aid to the physician in his healing art and in the preparation of pure medicines of definite and authorized strength. This condition of specialization will come, for pharmacists are marching onward in the line of progress; and it is only a question of a few years, when the host of young men, graduating by the hundreds from our colleges of pharmacy, and who are thirsting to apply their teachings and make their living in this practical application, will unite and raise the standard of their business to the profession which it is theirs to make it.

## THE TELL EL-AMARNA TABLETS.

BY THE REV. THOMAS HARRISON, F.R.G.S., MEMBER OF THE SOCIETY OF BIBLICAL ARCHÆOLOGY, AND SENIOR LECTURER TO THE PAL-ESTINE EXPLORATION FUND, STAPLEHURST, KENT, ENGLAND.

THE Tell el-Amarna tablets, after some years of patient study on the part of experts, are now known to consist for the most part of a political correspondence of great interest and importance between kings, governors, and officers, who formed their plans, struggled with their difficulties, fought their battles, and made their exit from the worry and work of life 3,370 years ago. These letters are inscribed on brick tablets, and, as a rule, occupy both sides of the tablet. With two exceptions, which are from Hittite princes and in their language, the letters are written in an ancient form of the cuneiform script. They were found in the year 1887 by an Egyptian peasant woman amid the ruins of the palace of Amenophis IV., or Khu-en-Aten, at a place now known as Tell el-Amarna, midway between Minieh and Assiout, on the eastern bank of the Nile, about 180 miles by river south of Cairo. The tablets number 320. The writers of the letters from Palestine (178 in number) are Amorites, Phœnicians, Philistines, and others, and they are addressed to the Pharaoh of Egypt and certain of his officials. At the time of this correspondence (about 1480 B.C.) the power of Egypt was waning and Egyptian garrisons were

being withdrawn from Palestine in face of successful attacks by the kings of Armenia, Nii, Shinar, with the Hittites of Merash and Kadesh on the north, and of equally successful attacks by the Abiri (Hebrews) on the south. The letters state that the Abiri came from the desert and Mount Seir. Major Conder affirms that "the date of the letters is exactly that which is to be derived from the Bible (I. Kings vi., 1) for the Hebrew invasion, according to the Hebrew and Vulgate text, and it agrees with the fact that the Egyptian conquests made by the XVIII. dynasty (1700 to 1600 B.C.) had been lost when the XIX. dynasty acceded." It is certainly very interesting to find in the letters the names of Japhia (Josh. x., 3, one of the kings killed by Joshua) and most probably that of Adonizedek, king of Jerusalem; while the name of a king of Hazor is read as Jabin (Josh. xi., 1). It is also pointed out that the name of the captain of Jabin's host is, Egyptian, Sisera or Ses-Ra, meaning servant of Ra.

In most of the letters from the kings of the cities of Phœnicia and Northern and Southern Palestine the appeal is ever one for Egyptian troops to enable them to hold their cities for the Pharaoh, to whom they seem to have appealed in vain. The earlier letters of brave Ribadda, the king of Gebal (now Jubeil, north of Beyrout), usually begin with the following salutation, which is given as a specimen of such salutations at that time, "Ribadda of the city of Gebal of his Lord, the King of many lands, the prosperous king, Baalath of Gebal, she hath given power to the King my Lord. At the feet of the King my Lord, my Sun seven times seven times I bow."

The salutation of the later letters becomes shorter and less ceremonious, as Ribadda felt that he was being left to his fate. Here is one of his appeals for help: "I have been hard pushed. Help speedily O King my Lord. . . . Soldiers and chariots, and you will strengthen the chief city of the King my Lord."

And what can be more pathetic than this, coming from that same brave heart, which has now for more than 3,300 years ceased to trouble itself about chariots and men of war and Pharaohs who could not or would not come to his aid.

"And will not my Lord hear the message of his servant? Men of the city of Gebal, and my child, and a wife whom I loved, this son of war, the son of Abdasherah has seized; and we have made a gathering, we have searched; and I cannot hear a word spoken about them. I am doing my duty to the King my Lord, and once more, despatch thou men of garrison, men of war, for thy servant, and will you not defend the city of the King my Lord?"

On May 14, 1892, a cuneiform tablet was found by Mr. Bliss while excavating at the old Amorite city of Lachish, in Judea, in which the name Zimridi twice occurs. From the Tell el-Amarna tablets we learn that Zimridi was governor of Lachish, and, moreover, in a tablet from the king of Jerusalem to Amenophis IV., we are informed of the death of Zimridi at the hands of the servants of the Pharaoh just named.

Many matters of great interest in connection with these tablets can find no mention within the limits of this paper. It may be added, however, that the topographical value of these letters is very great; and also that the evidence which they afford as to the Hebrew conquest of Palestine under Joshua is in favor of the Bible chronology (Acts xiii., 20; I. Kings vi., 1) and against that of Dr. Brugsch and Bunsen.

## SOME CONFLICTING ESTIMATES OF DISTANCE.

## BY ARTHUR E. BOSTWICK, PH.D., MONTCLAIR, N. J.

ACCORDING to all authorities with which I am familiar, a small, regular pattern, if looked at squintingly, so that the horopter is nearer the eye than the pattern, but at such a distance that adjacent corresponding parts of the latter overlap and coalesce, should appear closer to the observer, and if looked at in like manner, but so that the horopter is farther from the eye than the pattern, it should appear farther away. This seems natural, for, in each case, the image on the retina being unblurred, the point to which the axes of the eyes converge should be taken as the distance of the object. In this case, the angle actually subtended by the pattern remaining the same, the mind should infer, in the