A New Secular Version of the Bible.

A new English version of the Old Testament, from a text corrected by comparison of the best manuscripts, has for some years been in preparation by the Johns Hopkins Press, says the Baltimore Sun, under the supervision of Prof. Paul Haupt, of the Johns Hopkins University, and by the end of the present year a number of the books composing the Hebrew Scriptures will have been published. A feature of the enterprise is that it is not in the hands of theologians. It is purely a secular work, and the only aim has been to get, first, a correct text, and then a correct translation, without regard for its bearing upon any creed or scheme of unbelief. Since the time of King James, when the received version was made, many new helps to the right rendering of the Hebrew text have been discovered. Semitic scholarship has made great advances in methods as well as the acquisition of ampler materials for comparison, elucidation and study. By the coöperation of Semitic scholars of the whole learned world, Prof. Haupt has secured a Hebrew text which is being printed at Leipzig. It is printed in colors, the same page having sometimes as many as four colors, each color denoting a different element in the construction of the text. A single line may contain several colors to distinguish the undoubted original from portions that are in doubt. The fact that parts of the same book belong to different periods or authors will also be indicated. For example, in the book of Leviticus the "Priestly Code" will be in black letters on a white background. The parts added later will have a brown background and the Law of Holiness will be in yellow. Interpolations are indicated by overlining. Where the original is poetry this will be indicated in the translation.

After securing a perfected text the various books were allotted to the most learned Orientalists of this and other countries for translation, the book of Ecclesiastes being allotted to Prof. Haupt. In a recent issue of the New York Journal an article by Rudolph Block compares the new version of chapter xii of Ecclesiastes with the old with some interesting results. The chapter is chiefly an exhortation to the cheerful enjoyment of the good things of life, with an allegorical conclusion in which the decay of the several faculties is ingeniously depicted. Everyone recalls the familiar passage, "Remember now thy Creator in the days of thy youth, while the evil days come not," etc., and the following passage: "In the days when the keepers of the house shall tremble and the strong men shall bow themselves and the grinders cease because they are few and those that look out of the window be darkened." In the new version this runs:

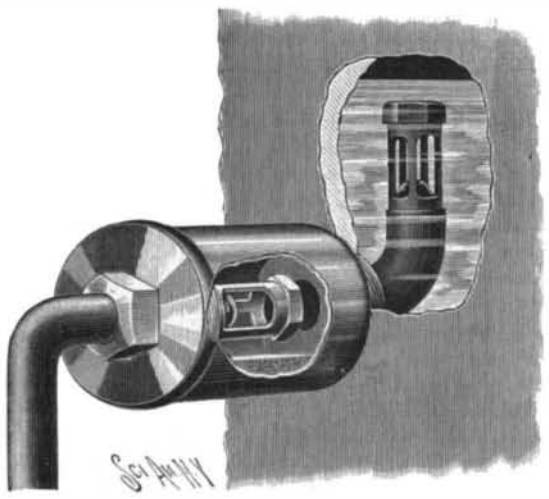
> Remember thy wife in the days of thy vigor,
> Ere there come the days of evil,
> And the years draw nigh
> In which thou wilt say I have no pleasure.
> Ere is darkened the sun and the light of day,
> And the moon, and the stars,
> And the clouds return after the rain,
> When the keepers of the house tremble,
> And the men of power bend themselves;
> The grinding maids cease
> And the ladies that look out through the lattice are darkened.

The meaning is plainer in the new version. "Ere is darkened the sun," the professor says, refers to the sunshine of childhood, when all is bright. The "moon" suggests the tempered light of boyhood, while the "stars" indicate fewer moments of happiness in mature age. As age advances there are many days darkened with rain "and the clouds return after the rain," so that there are few bright moments. The "keepers of the house" are the hands. As age proceeds erectness of carriage is lost—"the men of power bend themselves." Man loses his teeth, which are "the grinding maids," and his eyes grow dim—"the ladies that look out through the lattice are darkened." The old man's sleep is short and "he rises at the voice of the birds." The "daughters of music are brought low" means that the sense of hearing is lost. The septuagenarian dislikes to go upstairs or climb a hill—he is "afraid of that which is high." His hair becomes white—"the almond tree blossometh." The pessimism of the chapter is intensified in the concluding line of the new version, "All is vanity and all that is coming is vanity."

THE College of Civil Engineering at Cornell University is engaged in the determination of the longitude of Cornell. They are working conjointly with the United States Naval Survey and Harvard University. Two officers of the naval survey are stationed at Washington, D. C., for accomplishing this purpose. The astronomical observations at the three places must be carried on simultaneously, and great difficulty is experienced in getting nights which are sufficiently clear at all three places. Twenty stars are to be observed, in sets of four each night, and ten nights of simultaneous observation will be required to complete the work. The Cornell observer will then go to Washington to correct his personal equation, after which all the three sets of observations will be reduced to a common standard of time, and the special relation of Cornell to the rest of the universe will be determined with final accuracy.

SAFETY CHECK FOR BOILERS.

The safety check shown in the illustration has been patented by Mr. Frank Albin, of Dodge City, Kansas, and is especially intended for use on locomotive boilers. It consists of an exterior mud pocket, which is threaded into the shell of the boiler, and receives at its outer end the injector pipe. The mud pocket is closed by a threaded cap which is perforated, and on the inner side is extended to form a valve cage in which is located a ball valve. The passage from the mud pocket to the boiler terminates in a short elbow which is screwed into the neck of the pocket and extends upward within the boiler, where it terminates in a ball valve similar to that in the pocket. The feed water, in passing through to the boiler, will deposit any solids and foreign matter which it may contain, within the mud pocket, where it will collect and settle. It

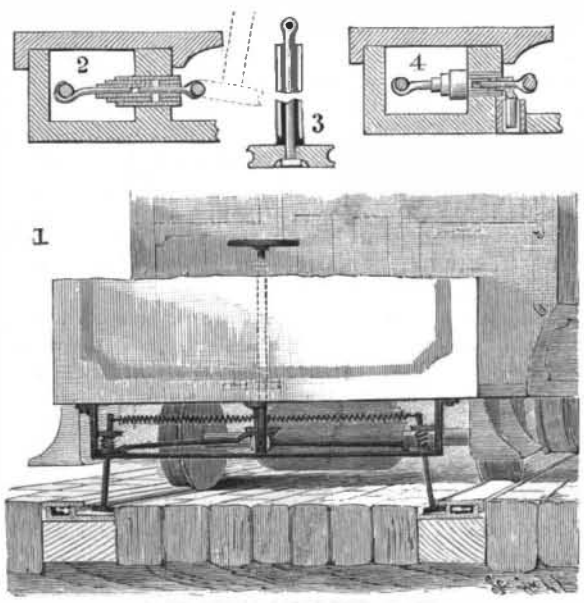


ALBIN'S SAFETY CHECK FOR BOILERS.

will be seen that the ball valves will prevent the return of water from the boiler, and should the mud pocket be broken off, the valve on the inside of the boiler will effectually prevent the terrible effects which ordinarily follow from the escaping water and steam in the event of collision. The inner ends of both the valve chambers are closed by spanner nuts, and the various connections are threaded, so that the device is easily taken apart for inspection. The valve in the interior of the boiler, moreover, enables the mud pocket to be opened and cleaned at any time when the boiler is under steam.

THE DUCT TROLLEY RAIL.

The device shown in the accompanying illustration is intended to dispense with overhead conducting wires, or the underground duct, as commonly used on electric railroads; and its construction is such that leakage of electricity is prevented, and the danger of accident to persons or horses in crossing the tracks is entirely removed. It has been patented by Mr. Charles Sill, of 301 West 12th St., New York. Each rail contains a continuous longitudinal duct, in which is carried the



THE DUCT TROLLEY RAIL.

conductor, and on the inner side of the rail is formed a recess, in which is carried a sectional trolley wire which is engaged by a trolley wheel, whose rod is adjustably mounted in a bracket attached to the under side of the car. The upper ends of the trolley rod are drawn together by the tension of a coil spring, and they terminate in wires which lead to the motor, the action of said spring serving to keep the trolley wheels in contact with the trolley wire. The conductor and the trolley wire are normally disconnected, and they are automatically connected as the car passes along the track. This is done by means of a contact making and breaking device, which is adjusted in the inner web of the rail and consists of two rods, one of which carries the conductor and the other the trolley wire, said rods being normally held apart by the tension of a rubber spring. These rods are carefully insulated from the rail, which carries them, so that only upon their being brought into contact with one another by the pressure of the trolley wheel as it passes can any circuit be formed between the conductor and the trolley wire. The transversely extending rod which carries the trolley wire is slidably supported at the upper end of a vertical rod, which is carried by the base of the rail, and carefully insulated therefrom. The whole of the insulation is carried out with great care, and the construction is such that all moisture is excluded from the conductor and leakage prevented. The trolley rod is hung pivotally on the upper arm of the above mentioned bracket, and has a rocking motion transversely to the car, in a slot in the lower arm of said bracket. The trolley rod is joined by a connecting rod to a crank disk, secured on a shaft extending longitudinally to the car, which is connected at each end by bevel gear wheels with the controller shaft on each platform.

By turning the controller in one direction, the crank disks operate to press the trolley rod wheels against the trolley wire, and thus push its carrying rods into electrical contact with the carrying rods of the conductor within the rail duct, thereby forming a temporary circuit on that particular section of the track, during the passage of the car. A coil spring, engaging the trolley rod and the two carrying brackets, allows sufficient vertical adjustment to meet the irregularity of the track or the passage of the car wheels over an obstruction.

The Heat Conducting Power of Metals.

After a thorough investigation of this subject, Herr W. Beglinger has arrived at the following conclusions: The results show that the heat conducting power of the different kinds of iron is altogether different. It is, therefore, of the greatest importance to know the coefficient of the inner heat conducting power. Steel and wrought iron show a more uniform behavior in this matter than cast iron. It is not confirmed that hardening reduces the conducting power of steel by almost one-half, though it may be conceded that hardening will reduce it slightly. The difference in working, by forging or rolling, showed only in one case, with wrought iron, considerable differences for the conducting power. Casting seems to cause far more irregularities.

Wrought iron showed generally better conducting power than did steel. Herren L. Holborn and W. Wien have compiled a table showing the heat conducting power of the different values. The average value for the different kinds of iron and steel is given. The factor, R, indicates that through a plate of 1 centimeter thickness at a difference of temperature of 1°, for 1 square centimeter each, a quantity of heat passes which will increase the temperature of R gramme of water by 1°:

Copper	R = 0·918
Iron	R = 0·156
Steel	R = 0·062 to 0·111
Zinc	R = 0·292
Tin	R = 0·150
Lead	R = 0·079

Aluminum Glass.

M. Leon Appert, the distinguished glass expert, has contributed to the Moniteur de la Ceramique et de la Verrerie an able article in which he discusses the prominent part which, he thinks, alumina is destined to play in the manufacture of glass. "After having made numerous analytical tests of ancient window glass," says M. Appert, "I have arrived at the following conclusions, which appear to be of practical industrial value. The introduction of alumina into glass prevents or at least retards devitrification, which will occur always by the slow and repeated lowering of the temperature. The presence of alumina makes it possible that a part of the alkaline bases, soda or potash, may be replaced advantageously by an equal quantity of lime. Glass thus modified in its composition is more solid, less changeable and more elastic. The alumina can be added to the silica without any inconvenience in a proportion not exceeding 7 to 8 per cent. The fusibility of glass is slightly increased thereby, while its ductility is not sensibly diminished. The only inconvenience that can arise from the use of aluminum is that it will color the glass to some extent. This coloring does not result from the alumina itself, but from the action of the iron oxide, which is always found in it when in an impure condition. To sum up, the use of alumina, which permits its introduction only into bottle glass containing larger proportions of sand bases, should be extended equally to glass destined for other purposes, such as mirror glass, window glass, and especially drinking glasses. The quality of such glass would be greatly improved thereby. In the latter case the addition of alumina could best be accomplished if pure clay or, still better, if feldspar is used, which can be obtained at a low price. For the batch the purest materials possible should be selected among those destined to furnish the silica, soda and lime bases."