

A JINGLE OF JOY.

Ain't this life we're livin' blest?
Honey in your mouth!
Green corn in the wint' west,
Melons in the south!

Oh, believers,
Hear the bugle's call,
Green corn in the summer time,
Punkins in the fall!

Ain't this life we're livin' jest
Brimmin' full o' joys?
Fiddles goin' south an' west,
Swing your sweethearts, boys!

Oh, believers,
Hear the bugle's call,
Melons in the summertime,
Punkins in the fall.

—F. L. Stanton, in Chicago Times-Herald

THE GHOST'S EYES.

Mrs. Robert Livingstone was a woman of superb dignity. Yet any one of her city friends would scarcely have recognized her in the rather clumsy figure running and stumbling over the rough canon road that led from the lower bean field to the ranch house. Her black skirts were not held up, but allowed to trail a little and catch the fine dust and tar weed stain as she hurried on. Nothing of trifling importance could have forced Mrs. Livingstone thus far to forget her elegant self, even alone in a canon.

The fog was coming up from the sea and slowly closing in and deepening the shadows of the gorge. It was already late twilight, and the loneliness and gloom of the place tortured her over tense nerves. A little owl flew with a shrill scream over her head, and she screamed with it. A belated ground squirrel rustled in the underbrush up the bank, and she felt that all the terrors of the jungle were upon her.

A sharp turn in the trail brought her at last in view of the house and the welcome glimmer of a light gave her a little courage. She quickened her steps still more in her eagerness, forgetting that the canon stream crossed the road at the bend, and, missing the board, she stepped in ankle deep. Ever this she scarcely noticed, but splashed on over the slippery stones. It was only when she reached the gate, breathless and disheveled, that she seemed to be able to think.

"I can't let Allen see me in this plight," she said to herself. "He would ask all manner of questions and not be put off, and I could not tell him that. Oh, no, no!" But just then a slight, youthful figure appeared at the veranda steps, standing on crutches.

"What makes you so awfully late, mother?" he called out to her. "I thought you never would get here," and the thin, complaining voice, even a little more impatient than usual. "Sing is on one of his worst rages and is mad as hops because dinner is late. I was even afraid to ask him to light the lamp and I've been sitting out here in the dark for ages. If there's a dish left out there it won't be his fault. Listen to that!" and just then a tin pan seemed to go spinning across the kitchen.

"I am very sorry, my dear," said Mrs. Livingstone, quietly, "but I was detained by the engineer. He says the thrasher engine is broken, and he must go to Seco Grande to-morrow for repairs. Some of the men were to be paid off, and I had their accounts to look over. I will be glad when your father gets home. Harvesting is too important a time for me to be left alone. Poor Allen! What a forlorn time you've had! Come in and we'll make up for it," and she preceded him into the dark little parlor.

Quickly lighting the lamp, she said: "Turn it up more, dear, after it has burned a little, and tell Sing to have dinner in five minutes. I'll be right out," and she hurried to her room, leaving her son wondering vaguely that his mother's hand should tremble as she held the match, and secretly wishing she had not left him to face the traitor Sing alone.

Allen Livingstone was 17, but long accustomed to having every wind tempered for him, he was naturally timid and not a little spoiled. Mrs. Livingstone lavished upon him that yearning and tenderness that a hopelessly crippled child calls forth from a mother's pity. He was at once her idol and her sorrow and his slightest wish was law.

Dinner at the ranch house was even more quiet than usual that evening. Mrs. Livingstone appeared tired and preoccupied, while Allen fretted childishly over the rather warmed up flavor of things on the table.

The offending Chinese came and went in sullen routine. After the coffee, Mrs. Livingstone put her arm lovingly over her son's shoulders and they went out to the parlor thus.

"I have a lovely scheme, dearest," she said. "While father is away I think it would be nice for you to come over and sleep in your old room adjoining mine. It will be more sociable and we can play we are both young again. What do you think?"

"I don't mind it," said Allen, indifferently, lighting a delicate cigarette. The house was one of those primitive Spanish structures, built of adobe, one story and three sides facing an open square—very pleasant and artistic with the deep verandas, vine-covered and cool, and the little court always full of flowers and sunshine, but not so convenient and practical for everyday comforts as some more modern plans for homes. The main part of the house is taken up by the living rooms, leaving the sleeping rooms in the wings and far separated.

It had been a trying time for Mrs. Livingstone, when her husband had insisted that Allen should give up his little bedroom next to theirs, which he had always occupied, and go across the court. The boy was no longer a baby, he said, and he had always needed that room for his own private use. He wanted a place for his desk and books and the big safe which held the family valuables and often considerable sums of gold and silver, as he preferred to pay his men in coin rather than by check in the usual way.

But his wife had never been reconciled to having her delicate child out of the sound of her voice at night,

and many a time had she stolen out in the darkness to listen at his window to see that her darling was sleeping well, and to indulge in a long moment of adoring worship, as she strained her eyes to see the pale face on the pillow. "I will go around the veranda now, dear," she said, as Allen smoked, "and bring your things for the night. The couch is very comfortable, and it will be lovely to have you back."

The chill air struck her unpleasantly as she opened the door. She shuddered a little and drew her shawl close.

"What a fog!" she exclaimed. "The beans will be again delayed. It's worse than the conflict of haying-making and showers in New England."

Coming out of her son's room a few moments later, with her arms full of his clothing she was startled by a slight noise across the court. It seemed like some heavy thing dropping with less sound than its weight would suggest. In the misty darkness she could see nothing.

Mrs. Livingstone was known far and near as a woman of unbounded courage and self reliance. During her husband's frequent business trips to San Francisco she stayed and ruled the little kingdom like a queen. Not a man on the ranch but was glad when Mrs. Livingstone was boss. The house in the canon was her castle, where she and Allen, with the faithful Sing, abode in security which none dared to molest. If anyone had told her a week ago that this night she would be a haunted creature, trembling and unstrung, tormented by an evil presentiment and dreading she knew not what, she would have laughed the prophet to scorn.

The parlor door had been left a little ajar, and she pushed through it and on to her own apartment.

"Please shut the door, Allen. My hands are full. I'll be ready for you soon."

Drawing the shades, she set resolutely to work about making her son's room comfortable for the night. She dared not think, or she felt that she would scream from sheer nervousness.

The dainty silver toilet articles, which were his pride, she arranged on the broad desk, and soon had the low lounging couch transformed into an inviting bed, with even a hot water bag tucked in at the foot. She took from her closet shelf his little toy like night lamp, which had been one of his childish idols, and lighted it, and after one or two little final touches here and there, she called him.

"It's time small boys were asleep. Look the front door, dear, and come. I have such a funny story to read to you."

Allen hobbled in, a slight frown on his delicate face at being babyed, and surveyed the little room.

"It's as cold as a barn here," he said. "What makes it so cold? I don't want to go to bed yet."

"Oh, yes, you do. It's getting late. You'll soon be nice and comfortable in your old nest. You will find it warmed."

"Oh, well, I suppose there's nothing to do," he complained.

"Where's the story?"

"I'll get it right now, while you're beginning ready," and Mrs. Livingstone settled herself by her lamp to read.

In less than half an hour she quietly peeped in to find her boy fast asleep. She wanted to stoop and kiss the white forehead, but she denied herself lest she waken him.

Nearly closing the door she walked restlessly about her room a few moments, aimlessly touching this and looking at that.

She took her account book out of the druggist's dress she had worn down the canon and looked it over a little, soon putting it aside. She tried to read, but the words followed each other under her eyes in an unknown tongue. She took up her Bible, and even that seemed to hold no word of peace.

Something as people in great peril go over their past life, she fell to thinking of hers, but she was soon brought back face to face with the present. The thought that she was struggling so to keep in abeyance at last seemed to break its bounds and fill her soul with an irresistible fascination; she dwelt upon it and did not try to put it aside.

At midnight, she had awakened suddenly, being conscious of a noxious presence near, and slowly there had grown from it two dark, glittering eyes close to her own, which held her gaze with terrible intensity. The evening in the canon they had been there before her all the way, and she had almost succumbed to their terror. For the first time she had noticed that the brows and corners of the eyes had been slightly upturned, like the Mongolian. What did it all mean? The end was not yet. What would it be? These thoughts seemed to enthrall her.

It was nearly 11 o'clock. Would it come to-night? Outside, the night was so deathly still, and so lonely. Why didn't the wind blow! Anything that would break the spell upon her.

She turned the light down, and threw herself wearily on the bed as she was.

With the first stroke of the clock at midnight she woke from a troubled sleep. In a moment she became distinctly conscious of a smoky odor, the unmistakable scent of a Chinese's clothing. A slight noise on the floor caused her to sit up quickly. A man's head and shoulders were slowly emerging from under the bed. One sickening moment she wavered, then sprang out upon him, holding him down for an instant; but he turned, and there glared up at her those same eyes—the fiend like eyes of her vision, and the man was Sing.

She grappled with him in superhuman strength, how many desperate, struggling moments she never knew. It seemed an eternity. Not a word was uttered. She saw that his superior strength must gain in the end. He constantly tried to reach for a knife, which evidently was caught in some way, for he failed to get it in his hand.

At last, Allen heard the noise and appeared at the door, almost fainting with fright.

His mother spelled out to him: "G-e-t t-h-e a-x q-u-i-c-k," then added: "Go to bed, child."

The boy had presence of mind to go around, as there were many locked doors in the way through the house. The Chinese, afraid of some outside assistance, began to beg.

"Me catches money—me no kill. You gib key—me no kill. You no gib, me allee same killee you, killee Allen, too. You gib key."

Mrs. Livingstone said nothing, and in an incredibly short time for him, Allen came in, panting and dragging the gleaming ax.

The fiend saw it and became like a madman. He shrieked and bit at the strong white wrists that held him like a vise. He foamed at the mouth in his fit of rage and fear.

"Allen," she said, "get the trunk rope in the closet—be quick."

After an almost hopeless struggle and a little weak help from her son, she managed to tie one hand, then both together, and had Allen make the other end fast to the bedstead.

The rope was old, and it gave way they were lost, for it was the only thing of the kind available. His knees were still on his chest.

"Allen," she commanded, "go from this room and shut your door tight after you."

He was almost stupefied, but obeyed blindly. In another instant he heard an awful blow and a short shuffling round, then a long moment of silence, but he dared not go in again.

Presently his mother appeared holding her wounded hand. She looked to him in the dim light like an old woman. Her face was ashen and drawn, and her dark hair had turned almost snow white. He looked at her mutely.

"My dear," she said, slowly. "God knows it was the only way. He gave me the power to save us, or you and I, Allen, would this moment have been in the traitor's place."

She gave an involuntary shudder, but turned and looked the door on the ghastly scene.

Taking some antiseptic solution she bathed her hand thoroughly and bound it with some of Allen's handkerchiefs. She then sipped a small glass of whisky and water and lay down beside her son. So the long night wore away.

There have been few changes in Seco Valley. The lima beans grow on the broad, sunny lowlands, are harvested and grow again. The canon brook still sings its love song to the blossoming hillsides. The owls and mocking birds, the squirrels and the lizards, live as before, but the vines run rampant over the broad piazzas of the ranch house in Seco Canon. Only a few complaining doves have their home in the low garret.

When Mr. and Mrs. Robert Livingstone returned to live in New York their friends welcomed them with open arms. It was hinted that, not being to the manor born, Mr. Livingstone had not covered himself with glory or lined his purse with gold in his ranching scheme; but it was the change in Mrs. Livingstone that excited the most comment. The snowy hair, the restless, hunted expression and absent manner spoke of some stupendous change from her old self.

To only one trusted friend did she confide the mystery of her life. Every night at 12 o'clock there appeared to her two fierce, hard eyes, which would not turn till she was nearly beside herself with horror.

Earthy Substance in Food.

When we consider the amount of earthy or inorganic substances, including some of metallic origin, that we are in the habit of taking with our foods, it may be a question whether the eating and drinking habits of our most enlightened people are not open to criticism.

The Pacific Health Journal says that it is a well-known fact that the habitual use of limestone and other mineral waters will cause goiter. The mineral products cannot be absorbed into the fluids of the body and thrown out; they are, therefore, deposited in the glandular system, giving rise to disease of these organs. And yet are not mineral waters extolled to the skies? And do not our invalids rush to the "mineral springs" all over the country, expecting to be healed? You could not persuade these people that pure water would answer just as well—in fact better—though certain celebrated springs, the waters of which, as shown by chemical analysis, are entirely free from any foreign ingredient, have given most wonderful results.

One effect of the use of mineral or earthy substances in food or drink is to break down the kidneys. The habitual use of bicarbonate of soda in bread, pastries, etc., is no doubt injurious. But how many are willing to give up their hot biscuits at breakfast or their batter cakes, though very palatable bread can be made, and also light, with nothing in it but air and water? Very excellent pastry, and as "light as a puff," can be made with white flour or from flour of the whole wheat. It requires a little management in the baking, but this can be learned; and, if health is any object, it might be worth while to take lessons.

Eggs Shipped Without Shells.

A consular report tells of large quantities of shelled eggs being sent to England from Russia and Italy for the use of pastry cooks, bakers, hotels and restaurants. The eggs are emptied from their shells into tin cans holding 1,000 or more, and after being hermetically sealed are packed with straw into wooden cases, the tins through which the contents are drawn being added by those using them. Great care is necessary in selecting the eggs, as a single bad one would spoil the whole lot. Lower price and saving of time and greater ease and less expense and loss in handling are named as the advantages of this system. Thus far the Russian product has been uniformly good, whereas the Italian shipments have so frequently been spoiled that analysis of the Russian supply has been ordered to determine if preservatives are used.

Vinegar is mentioned in the Egyptian records as a medicine in the tenth century, B. C.

NOTES AND COMMENTS.

JAPANESE statistics show that "the whole number of men lost in battle in the war with China is 623." It was a lucky thing for the Japanese army it did not run up against a foot-ball team, a Fourth of July or a Brooklyn trolley car.

The Supreme Court of Nebraska has just declared unconstitutional the law requiring railway engineers to whistle at every highway, and imposing a fine of \$50 for every failure to do so, half of which went to the informer. For years the farmers along the railroads have made considerable money by bringing suits under this law. The Union Pacific Railroad recently had to pay \$3,500 to one man alone.

PREPARATIONS are making to include an exhibition of aeronautical apparatus in the Paris Exposition in 1900. The exhibit promises to be of unusual interest. It will include samples of balloons of various designs and all kinds of flying machines and soaring apparatus. A number of prizes and medals will be awarded to the most successful designs, and foreigners will be able to compete upon equal terms with French inventors.

THE trained dogs of the German Army seem to be a valuable acquisition. At a recent exhibition in Dresden the animals carried dispatches from one part of the field to another a mile distant in one or two minutes. Carrying cartridges in their pack-saddles to points of need, and assisted men who feigned being wounded, some dogs signaling the spots of the fallen by loud barks, and others dragging the bodies to the rear.

APPROPOS of the agitation for good roads, the Detroit Journal says: "The thing to do is to encourage the spirit of road reform, and cause it to spread into all the States." Certainly that is a good thing to strive for, but it is not enough, comments the New York Tribune. Something more than the spirit of road reform is needed. There must be a practical demonstration of the advantages of first-class highways to encourage any community to undertake this work. A few miles of good road are worth more than theories on the subject covering reams of paper.

THERE has been a notable revival in the mining industries of the Pacific coast States and Territories of late, according to reports recently gathered by the San Francisco Chronicle. Many old gold and silver workings are being reopened and new discoveries developed, and there is also a greatly increased activity in the working of the many other valuable mineral deposits of the region in addition to the precious metals. The utilizing of water to generate electric power for running mining machinery is a new factor that gives promise of greatly extending mining operations all over the Pacific coast and the Northwest.

THE desert of Sahara is not all a desert. In 1892 more than nine millions of sheep wintered in the Algerian Sahara, paying a duty of 1,768,000 francs (\$352,000). These sheep were worth twenty francs (\$4) apiece, or in all 175,000,000 francs. The Sahara nourishes also 2,000,000 goats and 260,000 camels, paying a duty of 1,000,000 francs. In the oases palms, citrons and apricots abound; there are cultivated also onions, pimientos and various legumes and vegetables. The oases contain 1,500,000 date palms, on which the duty is 560,000 francs. The product of a date tree varies from 8 to 10 francs; these of the desert give about 15,000,000 a year.

NEW YORK CITY is in the midst of a building boom that recalls the flush times of 1889. In fact, there is more money being put into large commercial structures and office buildings on Broadway alone from the Battery to Fourteenth street than at any time previously. The march of improvement, which for so many years was steadily northward, has turned back on its tracks, and twenty-four extensive improvements are in process on that portion of the great thoroughfare indicated. Old and cheap buildings that have for many years been eyresores are being razed to the ground, and new marble and granite. Eight million dollars is a conservative estimate of the value of the Broadway buildings now going up. On the upper west side, in the territory north of Fifty-ninth street and taking in the Morningside Park district, no less than one hundred high-class apartment houses are building.

A CHURCH has been organized in Bollinger County, Mo., with Ida Decker as chief divinity. She is a young, fair-haired and given to seeing visions. Her neighbors, rude, unlettered, superstitiously devout, believe her to be an angel in human form. They worship her as such, and the "church" is based upon their faith in her. The girl is apparently single-minded and sincere. From her trances she awakens with messages for the faithful, messages claiming sometimes to be from the deity himself, guiding them as He guided the patriarchs of old. Also, she brings word from the blessed dead in Heaven—according to the belief of her followers—and from lost souls in Hades. Her communications are listened to by these primitive people with all the reverence due to ancient sainthood. The "new church" of the mountains has now a membership of about one hundred—a century band of mountaineer neighbors, firm and ardent in their remarkable faith. They propose from now on to "proselyte" for their church, and to spread their belief throughout the world.

The flocking of the rural population to the cities, its results and how to counteract them are problems that yearly become more serious. In the United States there has been a steady growth in the urban population during the last hundred years. In 1790 the percentage of the total population which lived in cities was 8.85. In 1890 it had increased to 29.12. It has grown more than 7 per cent. in the last decade. England's percentage of urban population is the highest in Europe—48 per cent. Thrifty Holland is next in the list,

for 28 out of every hundred of her inhabitants live in towns. Belgium's percentage is 34.5 and France's but 24. This in Sweden and Russia that the rural population is the largest in proportion. In each of these countries 91 persons out of every hundred live outside of the towns. Norway, Greece, Switzerland and Germany, in the order named, have the next largest percentages of urban dwellers. Every schoolboy knows that one of the signs which foretold the crumbling and downfall of the Roman Empire was the gathering of the country people in the towns. At Rome there were 100,000 poor who lived on alms. The fields were deserted, and agriculture fell into such a deplorable state that in 198 A. D. the exemption from taxes for ten years was decreed for every person who should till the uncultivated fields of the empire.

COMMANDER MCGIFFEN, of the late lamented Chinese war fleet, gives the Century the best account yet published of the battle of the Yalu. From the account and from the commander's reasons for the Japanese victory are apparent. The two fleets were of about the same tonnage, rather over 35,000 in each case, but the Chinese had two big armored warships, while the Japs had none at all. The Chinese had also many more heavy guns. On the other hand, the Japanese excelled in rapid-fire guns, and with them made it so hot for the Chinese gunners that they couldn't do as much damage with their big guns as in theory they ought against unarmored or light armored vessels. The Japanese fleet had also the advantage in speed, which was a great benefit. After all is said, one comes back to the personality of the fighters. Two of the Chinese ships ran away, and, although the others fought bravely, their strategy was inferior to the Japanese, and their formation was broken up. The supplies and ammunition furnished to the Chinese fleet were inferior, owing to the knavery of thievish contractors. Nor was the defeat, at the worst, conclusive. From all these circumstances the New York Recorder is tempted to wonder what would have been the result of the battle if the opposing forces had swapped fleets a month before it began.

To Prevent Drifting Sands.

SOME years ago the Federal Government expended \$60,000 in planting beach grass along the ocean side of the tip of Cape Cod in an effort to prevent that drifting inland of the beach sands which threatened Provincetown with entire destruction. But the work was undertaken upon too small a scale, and the inhabitants of the town did not realize that the growth of the grass would have to be fostered, so that most of it has perished and the advance of the sand drifts continues. The State of Massachusetts has, however, now taken the matter in hand, through its harbor and land commission, and Mr. Leonard W. Ross, of Boston, has been retained as advisory forester. Mr. Ross proposes to adopt expedients similar to those so successfully begun more than a hundred years ago, to save lands on the shore of the Bay of Biscay, and expense will not be spared, for the harbor of Provincetown is the only one that affords shelter to mariners along many leagues of stormy coast. His method will be based upon that by which Nature itself once defended the point of the promontory. Her thick plantations of beach grass were backed by low forests of pitch pine, which were cut off for fuel by the early settlers. These will be renewed and, according to the Boston Transcript, a nursery has been already established for the propagation of the Scotch broom, Genista scoparia, which, with silver poplars, white willows and locusts and an undergrowth of smaller plants will be used to form windbreaks. Austrian and Scotch pines will be tried also the marine pine, the alder, the European white birch, the hornbeam, the cockspear thorn and the tamarix.

Making Glass Eyes.

THE processes used in manufacturing eyes for stuffed animals are far more simple than those employed in the manufacture of artificial human eyes. The skilled workman has provided merely with glass stuff of different colors and a blowpipe such as is commonly utilized by the glass blower.

He takes a piece of wire a few inches long, and with his blowpipe attaches to one end of it a small lump of black glass, revolving the extremity of the wire in the flame of the blowpipe until the bit of black glass has assumed the form of a round button. This is the pupil of the eye that is to be.

Having permitted it to cool, the workman next takes some transparent and colorless glass, by means of the blowpipe, in the flame of which he causes the button to revolve. Thus is formed about the little black button a larger button of clear glass, which is destined to represent the iris or colored part of the eye surrounding the pupil.

But, as has been said, this glass is colorless. The color—yellow, brown, or of whatever tint—is applied afterward with a mineral pigment. This paint is put on the back of a button, which produces the effect desired from the front.

Naturally, some modifications of this method are required for indicating the eyes of other animals. For instance, the pupil of the tiger's eye is not round, but elongated, like any other cat's. Accordingly, the black button must be made of corresponding shape.

The eye of a living tiger is one of the most beautiful in the world. Its iris is yellow, with such wavy markings as may be discovered in the colored part of a human being's eye. These markings are imitated with much ingenuity by the workman who applies the paint.

No one can tell where the diamond goes to in combustion. Burn it, and it leaves no ash; the flame is exterior, like that of a cork, and when it has blazed itself out, there remains not even so much as would dust the antennae of a butterfly.

WAR AGAINST INSECTS.

Secretary Morton Talks About the Work of His Department.

The compilation by Professor Patton, of the Ontario Agricultural College, of the figures concerning the annual loss from the work of destructive insects was discussed by Secretary Morton, of the Agricultural Department. He said:

These figures are mostly drawn from American sources and mainly from publications of the United States Department of Agriculture, and they serve a good purpose in directing attention to the necessity for active work on the part of economic entomology, but in one way they are somewhat misleading. The losses to individual farmers, and occasionally to the agricultural population of a more or less restricted portion of the country, are frequently very great, summed up in dollars and cents, yet the actual money loss to the agriculturists of the country at large is by no means expressed by these same figures, for the simple reason that the loss of a portion of the crop means an increased price for the remainder. We may express the loss from insects in terms of bushels of produce, but in turning it into money value this factor of increased price must not be overlooked.

The expenditure of \$3 an acre, following the latest methods ascertained by the entomologists, will keep the orchard healthy. The work of the division of entomology during the last few months on the cotton boll weevil in Southern Texas will result next year in the saving of many thousands of dollars to cotton planters in that section, if the recommendations are followed.

These instances are new and are simply examples of saving work which is going on from year to year. It is probable that in the aggregate they result in the saving of even greater sums than do the much rarer but more striking instances, such as the introduction by the Department of the Australian lady bird into California, by which the entire citrus industry of that State was saved from destruction.

Not a small item in the total value to be accredited to the entomological work of the Department is the exposure of "fake" remedies. Only the present season the entomologist has shown that a tree inoculating company in the New England States, which claimed to be able to inoculate trees against the ravages of leaf feeding insects, had been basing its claims upon the disguised application of a method which was proved to be totally inefficacious fifty years ago.

Incidentally, and although not pertaining strictly to agricultural interests, I might mention that the application of a remedy against mosquitoes, first practically used by our Mr. Howard and recommended in his publication during the past year or two, has resulted, in two instances at least, in rendering habitable large sections near Long Island Sound, and in so greatly increasing the value of real estate that the owners have made large sums of money as a direct result.

Music By the Ton.

IT requires more force to sound a note gently on the piano than to lift the lid of a kettle. A German composer has figured that the minimum pressure of the finger, playing pianissimo, is equal to 110 grammes—a quarter of a pound. Few kettle lids weigh more than two ounces.

The German's calculations are easy to verify if one takes a small handful of coins and piles them on a key of the piano. When a sufficient quantity is piled on to make a note sound, they may then be weighed and these figures will be found to be true.

If the pianist is playing fortissimo a much greater force is needed. At times a force of six pounds is thrown upon a single key to produce a solitary effect. With chords the force is generally spread over the various notes sounded simultaneously, though a greater output of force is undoubtedly expended. This is what gives pianists the wonderful strength in their fingers that is often commented on. A story used to be told of Paderewski that he could crack a pane of French plate glass with an inch thick merely by placing one hand upon it, as if upon a piano keyboard and striking it sharply with his middle finger.

Chopin's last study in C minor has a passage which takes two minutes and five seconds to play. The total pressure brought to bear on this, it is estimated, is equal to three full tons. The average "tonnage" of an hour's piano playing of Chopin's music varies from twelve to eighty-four tons. Wagner has not yet been calculated along these lines.

World's Greatest Eaters.

THE Koreans are the greatest eaters in the world, their motto undoubtedly being, "We live to eat." The average Korean eats everything he can get his teeth on and he will take a dozen meals a day if afforded the opportunity. He is by no means particular as to the manner in which his food is served. Raw fish is a common article of diet in that country and slices of uncooked white trout and slices of very toothsome by these peculiar people. European travelers who have tested the quality of this food state that it is not at all repulsive after the first mouthful has been masticated. The Korean fisherman, before going out to make a catch, provides himself with a bottle of pepper sauce and when hungry will take a fish from the hook as soon as caught, scrape off the scales and sprinkling a quantity of the peppery compound over it devour it with the greatest gusto. They are great lovers of chicken, but consider that the only necessary preparation is to strip the feathers from the fowl and without drawing it put it into a stew pot to bake. In some cases they will not take the trouble to pick it, but serve it baked in its natural state, feathers and all.

Suicides of Europe.

Germany leads the suicide list of Europe with 2.71 a year out of each 10,000 inhabitants. In the German army, however, the ratio rises to 6.33 out of every 10,000. Austria has only 1.63 suicides out of 10,000 people, while in her army she has twice the suicide death rate of any other European country—12.53.

The happy inhabitants of sunny Italy seldom commit suicide. Less than one person in every 20,000 Italians dies in this manner. The army of Italy has 4.07 deaths by suicide out of every 10,000.

Spain and Russia, both in their armies and in their civil life, have the smallest number of deaths from suicide, so it is not therefore possible to explain these figures by any comparison between the Latin and Slavonic races.

THE LARGEST TELESCOPE.

A Remarkable Lens Made by an American Firm.

The Clarks have accomplished what has long been regarded as an impossible thing and one which no European manufacturer of lenses could be induced to attempt. This is the making of a perfect lens of more than three feet across the face. No one but the American manufacturer ever thought of exceeding the twenty-six inch lenses which are in use at several observatories on both continents, one at the Naval Observatory at Washington, through which Mr. Hall discovered the long-sought satellites of Mars and many double stars. The highest power was supposed to be reached when the Lick telescope in California was put up with a thirty-six inch lens. The difficulties to be met in the production of a perfectly clear lens of great size are so many that European observers who have wanted anything above twenty-six inch lenses have had to take to the reflecting telescope, which has a concave mirror. It requires, of course, a much larger reflecting telescope to get the same amount of light and the same magnitude of objects.

The making of this 41½ inch lens is regarded as the crowning work of Mr. Alvan Clark's life. It is probable no larger lens will ever be made. Under existing conditions a larger telescope than the Yerkes—the telescope of the Chicago University Observatory, for which the lens is made—would be of no great value. To increase the magnifying power is at the same time to increase the obstructions to clear vision. When the object is magnified the atmospheric agitation is increased to such a degree that distinctness is virtually sacrificed when the object glass is larger than 41½ inches. It is doubtful if the Yerkes will be any more useful than the Lick. Some day it may be possible to remove the obstacles to clearness in the case of a powerful lens, though the only reason for suggesting it is that Professor Tyndall was able to construct a glass by which the blue of the atmosphere was dissipated in looking through a deep space.

If the Yerkes glass answers expectations it will enable an experienced observer to catch occasional glimpses of the Mars canals, which, though drawn so firmly on the Vatican maps, are vague and wavering, and almost imaginary through any glass. They can be seen at all only by the trained observer. The great telescope will be most useful in the study of double stars, which is now a matter of special interest to many observers.

DEATH VALLEY.

Stories of the Noted Region in Southern California.

Mr. Edward Thompson, of Santa Barbara, Cal., who is now in this city, says that one of the last authentic attempts to cross Death Valley was made by a party of prospectors, with a wagon train, in 1854. The story of this wagon train and the horrors of Death Valley has been told many times and in many ways. But it is doubtful if anything has yet been printed tells half the story of the journey. The remains of this train are yet to be seen in Musquitte Valley, one of the canons of Death Valley. The last of the party perished here while trying to make Towns Pass and Tule Canon with his burden of dead bodies, the remains of his companions who had perished one by one during the journey across the desert. Mr. Thompson and the party accompanied by him found the wagon beds, tires and other remains of the trains.

A party of Mormons tried to cross the valley a year or so before that. Only one of the party lived to tell the tale. He escaped so miraculously. He managed to save his gun, but found on reaching a land where he could sit down and breathe that the sight had been lost. He looked around for something out of which to make another sight, and noticed that the rock on which he was sitting was filled with a soft, metal like substance. He carved out a bit of this and made a gun sight with it. He then made his way to Los Angeles, shooting game to live upon on the way. In Los Angeles a man saw the strange gun sight and asked where he got it. He told, "Why, your fool," said the man, "that sight is of pure gold. The rock you sat upon would make you rich for life." A party was organized and tried to locate the rock, but they suffered much and could not find it. The spot, which was not found, has been called the "Lost Sight Mine." Mr. Thompson has some little hope of finding this rock. If he does, he will be repaid for all his trouble.

It is said that an army captain coming upon Death Valley from the Arizona side and not recognizing it, ordered his men to cross. The distance looked to be not more than a mile. An Indian refused to cross and said that it was the Valley of Death. Two scouts were picked out to lead the way. They were pointed to go, but were forced to turn back. They had not gone more than 500 feet before one of them fell dead. The other started back on a run. When he reached the party blood was gushing from his mouth and nostrils. He did not die, but was a maniac for life. These are all stories told by Mr. Thompson in explanation of the dangers of Death Valley. He expects to return from the Valley in October. He will then return to New York and prepare his stuff for print.