

eyes, he drew back out of her range of vision. She raised herself and memory came back.

"Oh, aunt!" was all she said, but the two words contained so much hopeless misery that John stepped forward.

"All a mistake, my girl," he said, huskily. And the next instant his daughter's arms were clinging tightly round his neck.

He held her to his breast, and he alone caught the sobbed-out words—

"Thank heaven! Thank heaven!"

The next morning Tom Blakely presented himself at the farm to apologize for his stupidity. John Milward was out, so Miss Milward sent him to Emily, who was in the garden robbing a laden plum tree of its golden fruit, a course of action loudly protested against by some dozens of wasps that were reveling in the mellow food.

Having disposed of him, Azubah went back into the kitchen and busied herself in preparations for dinner. After half an hour, she came out of the back door with her strong hands whitened by pastry-making.

"That girl must have forgotten about the plums!" she said, half aloud, as she passed along the turfy path.

Suddenly she started, for from behind a bower of green almost close at hand came the words—

"But not yet—not for a long while yet. I must show that I can be a good daughter before I try to be a good wife."

HOW TO DISAPPOINT A BALKY HORSE.

The *Fitchburg Sentinel* tells how a Leominster farmer cured his horse of a balky freak by gentle means.

He drove him, attached to a rack wagon, to the wood lot for a small load of wood. The animal would not pull a pound. He did not beat him, but tied him to a tree and let him stand. He went to the lot at sunset and asked him to draw, but he would not straighten a tug. "I made up my mind," said the farmer, "when that horse went to the barn, he would take that load of wood. I went to the barn, got blankets and covered the horse warm, and he stood until morning. Then he refused to draw. At noon I went down and he was probably lonesome and hungry. He drew that load of wood the first time I asked him. I returned and got another load before I fed him. I then rewarded him with a good dinner, which he eagerly devoured. I have drawn several loads since. Once he refused to draw, but soon as he saw me start for the house, he started after me with the load. A horse becomes lonesome and discontented when left alone, as much so as a person, and I claim that this method, if rightly used, is better for both man and horse than to beat the animal with a club."

WHEN a man, listening to his conscience, wills and does the right, irrespective of inclination as of consequence, then he is the free man. The universe is open before him.

THE PETROLEUM OIL WELLS OF BAKU.

We have at different times described the great establishment of Messrs. Nobel Brothers, at Balakhani, adjacent to Baku, and the operations conducted there. The boring of oil wells, the pumping, refining, and other processes, are not the only task which the petroleum industry of Baku has to carry out. The transport of the article to the consumer has also to be accomplished. It is known that for many centuries past there has been more or less trade in naphtha with Persia and other neighboring regions. The great problem was to get the oil into Russia, and send it into all the principal towns of that widely extended country. The distant position of Baku made this a most difficult undertaking. The oil has first to be sent in steamers to Astrakan; but at the mouth of the Volga, owing to its shallow water, a transshipment into barges has to take place. Some of the oil is sent on by the river, but the greater part is transported by rail. Trucks of a peculiar form have been made for this purpose, and they are now to be seen at all the principal railway stations in Russia.

Messrs. Nobel Brothers, who have brought all the science of Europe, as well as the experience of America, to bear on the manufacture of the oil, have also carried their ability and energy into the organization of transport. They have a splendid fleet of iron screw steamers, fitted up with tanks, which carry the oil to the Volga, with barges carrying it on to Tzaritsin. At this town they have a large depot, from which they send the oil by rail to depots in all the principal towns. By this means they now supply the whole of Russia, and the American oil has been entirely driven from that country. They have begun to extend the supply into Germany, and it may be looked upon as only a question of time when a great part of Europe will receive its petroleum from Baku.

Petroleum oil is now largely used as a fuel to heat the boilers in the Caspian steamers. The oil is brought to the furnace by one pipe, from a tank, while another pipe brings steam from the boiler; the oil is poured into the blast of high pressure steam, and is thereby pulverized or blown into minute particles, which become a sheet of flame underneath the boiler. If a sufficient supply of this fuel could be procured for our ocean-going steamers, many advantages could be derived from it. Among these may be noticed that it occupies less bulk than coal; a ton of *astatki*—the Russian name for *dregs*—is equal to about two tons of coal. The furnaces burning this material require no stoking, thus saving hands. On the Caspian a ton of *astatki* is about thirty or forty times cheaper than a ton of coal. In proper tanks it is perfectly safe—even safer than coal, the danger of which we have had experience of not long since. The disagreeable process, more particularly to passenger ships, of "coaling," would thereby be done away with. It would thus be cheaper than coal, safer, and its use would be conducive to the comfort of passengers and all on board ship.—*Scientific American*.