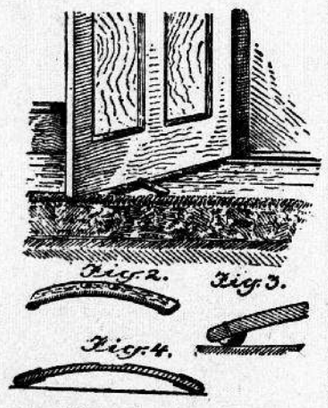
SCIENCE AND INVENTION

FOR HOLDING DOORS SECURE

Convenient Little Device May Be Made from Old Barrel Hoop As Shown in Illustration.

A convenient door holder may be made from a barrel hoop, as shown in the accompanying illustrations, by cutting a piece about eight inches long and inserting a rubber-head tack (such as used in the plumbing trade), at each end, on the under side, as



Home-Made Door-Securing Device.

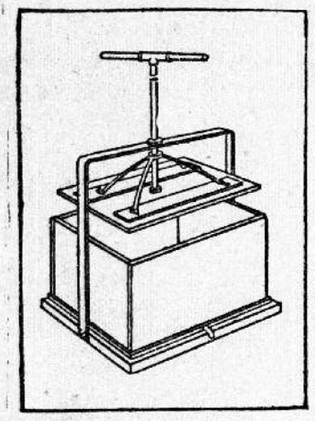
shown in Fig. 3, writes D. Pennington in Scientific American. Two such tacks are also placed on upper face, spaced apart sufficiently to allow the bottom of the door to fit between them. The arched shape of the hoop will give sufficient friction between the door and floor to hold the door in any desired position.

If rubber-head tacks are not available, the ends may be covered with some soft material such as carpet and tacked thereto. In place of tacks a notch may be cut in the barrel hoop equal to the thickness of the door, as shown in Fig. 4 of the illustration. The center of a barrel stave may be used instead of a hoop by cutting it to about the same width as the hoop.

PRESS FOR CHOPPING MEATS

Especially Handy for Making Sandwiches As It Eliminates All Waste—Easy to Slice.

An invention intended for many uses in the kitchen is the meat press designed by a Wisconsin man. For making pressed chicken, veal, or other meat loaf and for compressing meat



Meat Chopper.

for sandwiches this device is suited. In appearance the affair is much like a letter press, except that the lower portion, instead of being a flat plate, is a box, deep enough to hold a large quantity of meat. The meat or fowl is chopped up into large chunks and deposited in this box. The press is then screwed down until the contents of the box is compressed into a solid piece from which slices may be cut as from a loaf of bread. This is especially handy for making sandwiches, as it eliminates all waste and does not necessitate the slicing of the roast or fowl only where large pieces of meat can be obtained.

Treatment of Skin Troubles.

Liquid air and carbon dioxide have been successfuly employed in the treatment of various skin troubles, such as moles, pimples, superficial cancer and tuberculosis abscesses. The temperature of the carbon is the same as that of snow, and that of the liquid is much lower, but the carbon seems to answer all purposes just as satisfactory as the other. The method of treatment is as follows: Cotton wool, wound tightly on the end of a rod, is dipped into the double-walled glass flask of liquid air and then pressed lightly on the affected part of the skin. The skin freezes and becomes inflamed, and in from 10 to 20 days the morbid growth sloughs off.

Spider Bites.

The question whether the bite of a spider can have serious effects on the human system having been again raised, the French scientific journal, La Nature, replies, through a physician, that spider bites are not dangerous. Nevertheless, the doctor says that in some rare cases the bite of a spider may produce sufficient inflammation to require local treatment. The best plan is to wash the bitten place with pure water, and, if practicable, apply a little antiseptic lotion. In the vast majority of cases the bite even of a large spider causes nothing more than a slight local irritation.

Produce Pure Radium.

Mme. Curie and M. Debierne have presented a joint resolution to the French Academy of Sciences announcing that they have succeeded in producing a pure radium. This metallic radium which has been secured by isolation of foreign matter is a brilliant white, turning black on exposure to the light. It will not set fire to paper, decomposes water rapidly, and adheres to iron.

TO HEAR PHONOGRAPH MILES

Improved German Instrument Transmits Sound Long Distances, Avoiding Buzzing Sounds.

Buzzing or rumbling sounds in the phonograph, due to the friction of the needle on the cylinder, are avoided in the new German instrument, which, according to the Deutsche Musikwerk Industrie, combines the leading features of the phonograph and the siren.

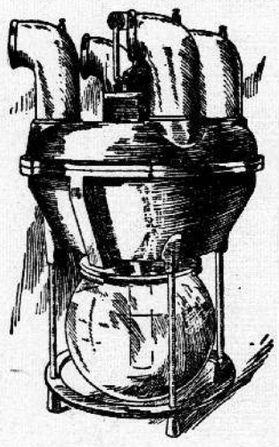
A current of compressed air is substituted for the needle, and the perforations in the disk of a siren are replaced by incisions on the surface of a large record cylinder. A record perfectly smooth cylinder rests closely upon the surface of the first cylinder, and revolves in unison with it as the two cylinders are set in motion. A constantly varying succession of minute openings between their surfaces is presented, due to the incisions on the record cylinder.

When a powerful blast of compressed air is directed upon the line of contact between the two cylinders at such an angle as to be an exact tangent to the surface of both, sounds are evoked identically as in the case of an ordinary siren. It is possible to communicate signals, and even words, which can, it is said, be heard miles away.

APPARATUS TO PURIFY AIR

Gives Off Oxygen in Such Quantities As to Revitalize Air in Large Halls Quickly.

This air purifier is a new type of renovating apparatus, consisting of a receptacle in which is placed an antiseptic solution, says Popular Mechanics. Through this solution the air of the room is drawn by means



Air Purifying Apparatus.

of a small motor-driven exhauster, housed within the machine.

The antiseptic solution absorbs carbon monoxide, carbon dioxide, sulphurated hydrogen and other poisonous gases, and also retains all dust particles and bacteria that may be in the air drawn through it. The solution is prepared by dissolving specially prepared powders in water, and is said to give off oxygen in such quantities as to thoroughly revitalize the air of a large room, hall, railroad coach and oher like place in a very short time.

Flying Fly Increases Weight.

A flying fly in an empty dinner pail increases the weight, even though it does not touch the pail, according to the novel discovery reported at Frankfort by Boeninger, a German engineer. An empty cylinder having a cover at top and bottom was suspended from the pan of a balance. When a fly was placed on the wall inside the weight was correspondingly increased, but when the fly left the side of the cylinder, flying into the interior, the balance was not affected. There was no change when either the top lid or the bottom one was removed, the fly's weight being still recorded, although it was flying inside. When both were removed, however, the balance was disturbed, and only the weight of the cylinder was recorded. With the upper lid on and the lower one off, the flying fly near the top of the cylinder was weighed exactly as if suspended from the lid.

Mercury Vapor Lamps.

A curious German use of mercury-vapor lamps is to supply ultra- violet rays for making sulphuric acid. Sulphurous acid gas mixed with air is introduced into a lead-lined tower sprayed with fine jets of water, and the ultra-violet radiation in the tower entirely converts the sulphurous into sulphuric acid. The acid solution is made stronger by using it instead of water to spray successive towers.

NOTES OF SCIENCE AND INVENTION

Great Britain exports about one-quarter of the coal it mines.

An ordinary gas jet consumes as much oxygen as five persons.

It is said that persons with red hair are the least likely to become bald.

Twelve cases of cancer in England have been traced to the use of the X-rays.

The Austrian war office has ordered two large dirigible balloons for the army.

A deposit of almost pure tantalum ore has been discovered in the Ural mountains.

Adulteration of food in France is said to result in a profit of $100,000,000 a year.

Radium gives a violet tinge to glass and porcelain and turns white paper yellow.

Cold storage plants of the United States have a total refrigeration capacity in excess of 200,000,000 cubic feet.

A fund of $9,000,000 is being raised by public subscription in Brazil for the building of another great Dreadnought.

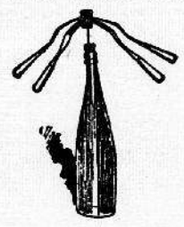
A committee of German aviators has figured that it would cost $100,000 to build a dirigible balloon big enough to carry 18 passengers in addition to its crew, and $375 a day to operate it.

CORNER FOR THE JUNIORS

BALANCING FEAT WITH FORKS

How Several Common Table Articles May Be Placed to Perform Rather Odd Tricks.

Several common table forks can be made to balance on a pin head in this way; Procure an empty bottle and insert a cork in the neck. Stick a pin in the center of this cork so that the end will be about one and one-half inch above the top. Obtain a second cork about one inch in diameter by one and three-fourth inches long. The forks are then stuck into the latter cork at equal distances apart, each having the same angle from the cork. A long needle, with a good, sharp



A Balancing Feat.

point, is run through the cork with the forks, and one-half inch of the needle end allowed to project through the lower end. The point of the needle should then be placed on the pin head. The forks will balance, and if given a slight push they will appear to dance. Different angles of the forks will produce various feats of balancing.

MANY TERMS OF ENDEARMENT

Italian Linguist Searching for Wooing Language of All Races—Chinaman Says "No Ugi Ni."

A noted Italian linguist, Professor D'Ozza of Genoa, has started a highly original work, which is the subject of considerable comment by the comic weeklies of Europe and is expected to be read with interest by linguists. It is to be a volume containing all the people of the world, savage and civilized.

The Parisian Le Rire remarks:

"How poetically the old expression "Je aimie vous"—I love you—sounds in the language of the young Greenlander, according to the professor's dictionary of love. Take a full breath and then whisper Unifgraeerndlainalerfironajunguarrigujak."

The Chinaman simply says "No ugi ni." One tribe of Indians express their feelings with "Main sym kapisar karin." A tribe in Africa is sparing of words, the lover sticking his tongue out and remarking "Aha." The Arab declares himself with one word—"Nehabbeck," while the Turk whispers, "Sidi seveiorum." The Armenian plainly says, "Se sirem es hez." In South America is a tribe of Indians that do not waste words on their beloved. Having made his choice the swain grabs the object of his affection by the nose and pulls her along with him.

GAME WITH GOOD EXERCISE

"Do as I Do" Calls for Working of Both Arms and Legs—Head Counts for Fifth.

For all those children who are fond of a little exercise no better game than this can be chosen. When the chairs are placed in order round the room, the first player commences by saying: "My master bids you do as I do," at the same time working away with the right hand as if hammering at his knees. The second player then asks: "What does he bid me do?" The second player, working in the same manner, must turn to his left-handed neighbor and carry on the same conversation, and so on until every one is working away with the right hand.

The second time of going round the order is to work with two, then both hands must work; then with three, when both hands and one leg must work; then with four, when both hands and both legs must work; lastly, with five, when both legs, both arms and the head must be kept going. Should any of the players fail in keeping in constant motion a forfeit may be claimed.

Writing Tricks.

Can you write your name with your left hand? It is a good thing to know how, in case you ever hurt your right hand.

Can you write a looking-glass letter? That always amuses children, so if you have a friend who is ill send her a looking-glass letter to cheer her up. Practice by writing on a piece of paper held in front of a mirror, and soon you will find it is quite easy to do looking-glass writing. Looking-glass writing is done backwards, so that it looks all right when it is held to the mirror. Also see if you can write your name backwards—that is, begin at the last stroke and go back to the first—and as a last trick try to write your name upside down. That is not at all easy, but copy your signature upside down and you will be able to do it quite well after a little practice.

After you can do all these things learn to write a good clear hand in the proper way, like a sensible person.

Story for Children.

When you think you are consigning a bore, or any one who irritates you beyond endurance, to a hot spot by telling him to go to blazes," it appears that you are mistaken, and that, instead of being rudely abusive, you are in fact merely blandly polite. The explanation is that once, in some far-away time, there was a good bishop named Blaize, who was always ready to dispense wise and sound advice to all applicants. Hence it grew customary to say: "Go to Blaize's."

CHILDREN LEARNING TO ACT

Educational Playhouse in New York for Benefit of Untrained Working Girls and Boys.

Down deep on the East side, New York, there is a little theater that isn't a theater at all. It is an educational playhouse where shine theatrical stars just as bright as the ones along Broadway—the dream of all play people, says the New Idea Woman's Magazine.

These stars during the daytime go to school or work behind typewriting machines, or add up long columns of figures, or watch mangling machines in the laundries all the day long. Only at night do they come out and twinkle merrily to lighten weary hearts.

Until the educational theater was organized, six years ago, the only amusement accessible to the poorest of the East side were the nickelodeons, the penny arcades, the tenth-class moving picture shows of the Bowery, Houston and Grand streets.

How to get the boys and youths, the girls and young working women to sidestep the insidious Bowery show; to have instead an evening of pure, clean enjoyment—that was the questiton.

After many weighty considerations it was at last decided to present a real play by wholly untrained working boys and girls. Then the educational theater was organized.

When a cast is to be selected the dramatic director lets it be known and applicants flock in. Sometimes as many as 500 apply for a place in a play that requires 30 members.

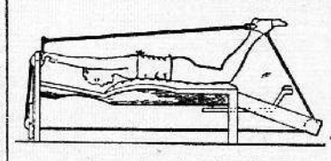
The admission to the performance is ten cents. This does not begin to defray the expenses, but that's not the idea—it's educational, and not commercial. That's the reason it's a playhouse, and not a theater.

The boy, or much more, the girl, who reaches that well-known period in life's journey finds himself or herself richer in experience, and yet, to all intents and purposes, absolutely ignorant of the real seductiveness, the real dangers and pitfalls of the commercial stage.

DEVICE TO TEACH SWIMMING

Framework Support Provided With Front and Rear Pulleys, Allowing Proper Movements.

A mechanical device for teaching persons to swim is shown in the illustration. It is a framework support provided with front and rear pulleys, elastic cables, and means for regulating the strokes of both arms and legs. The cable drawn out from the frame



Device to Teach Swimming.

by the outward stroke of the left arm draws the right leg through the proper swimming movement, and the movement of the right arm applies the same action to the left leg. The elastic cable underneath the frame restores the limbs of the pupil to their initial position after each movement. Means are provided to prevent a downward stroke of the arms and to limit the downward stroke of the legs.

Rainy-Day Games.

Lots of fun can be had with a peanut tournament. Have four people at each table, and in the center of each table have a large bowl of peanuts and a pair of tongs, such as come in candy boxes. Each person must try to remove the peanuts one at a time without stirring the other nuts. At the end of 20 minutes a bell is rung and the one having removed the largest number of peanuts is awarded a simple little prize.

Another simple but amusing pastime is to have a ring hung from the chandelier at a convenient distance from the floor. Each child must walk directly up to the ring and, without hesitating, try to run a pencil through it. This sounds easy, but if you try it yourself you will be surprised how difficult it really is.

Didn't Deliver Them.

A young man called at the office of a justice of the peace and with some hesitation made known his business, which was to be married. The rustic replied that he thought he could perform the service and asked if the young man had his license.

"Yes, sir," the youth replied.

"Well, where is the young lady?"

"She's at her father's."

"Well, bring her here."

"She'd rather be married at home, squire."

"And you expect me to go there and marry you?"

"Yes, sir, if you please."

"Young man," said the justice, "this office of mine is like a department store. We sell matches here, but we don't deliver them at the house."—Youth's Companion.

THOUGHT HE HEARD A NOISE

Woodrow Wilson's Good Story of the Absent-Minded Professor and the Burglar.

Woodrow Wilson, the head of Princeton, owes perhaps part of his popularity to his story telling skill.

Dr. Wilson, at one of his receptions, said of absent-mindedness.

"While I was a student at the University of Virginia we had a delightful old professor there about whose absent-mindedness many stories were afloat.

"A Charlottesville burglar once broke into the professor's house and hid under the bed. The old man, a little afterward, entered the room and began his preparations for retiring.

"As, in his dreamy, moonstruck way he pottered about the room, he heard a noise, started and said with a puzzled frown:

"'Dear me, is anyone there?'

"'No, professor,' replied the burglar, in a very low voice, for he knew the professor's peculiarities.

"'Well!" said the professor. 'I was positive I heard some one under the bed.'

"And his face cleared, he turned in and was soon fast asleep."

IN HIS SECOND BOYHOOD

Aged Man on Street Car Was Absorbed in Reading "Jack Spot, the Young Highway Robber."

He was very old and he scrambled into the "pay-as-you-enter" car with difficulty. Once safely inside, he seated himself in the corner of the car and began to read.

The car bumped itself along Walnut street, past Broad, past Rittenhouse square. Not once did the old man look up. He was absolutely buried in his book, to which he gave the absorbed attention of the scholar.

At Fifty-fourth and Spruce streets the old man cast a startled glance out of the window, got up, and hobbled to the front of the car. On the way he dropped his book, and several passengers had a chance to see the title before it was picked up and given back to its owner.

The volume which has so absorbed the octogenarian was "Jack Spot, the Young Highway Robber; or, the Desperado of Devil's Gulch."—Philadelphia Times.

INCOMES OF BRITISH FIRMS.

There are 20 merchants or manufacturers in the United Kingdom each of whom draws from business an income in excess of $250,000, so it appears from the report of the commissioners of internal revenue. The figures do not include persons whose profits come from land and from investments, and therefore there is no way of telling the incomes of the great bankers, brokers, speculators, stock owners and promoters, and landed proprietors. There are 79 firms with an income over $250,000 a year; and there are 284 individuals and 1,021 firms with incomes ranging between $50,000 and $250,000, and 581 persons and 1,615 firms with income of from $25,000 to $50,000.

STEVENSON'S PROTEST.

Robert Louis Stevenson: We make a travesty of the simplest process of thought when we put it into words; for the words are all colored and foresworn, apply inaccurately, and bring with them, from former uses, ideas of praise and blame that have nothing to do with the question in hand. So we must always see to it nearly, that we judge by the realities of life and not by the partial terms that represent them in man's speech; and at times of choice, we must leave words upon one side, and act upon those brute convictions, unexpressed or perhaps inexpressible, which cannot be flourished in an argument, but which are truly the sum and fruit of our experience.

PARADOXICAL HUMOR.

"Isn't it remarkable that our garbage man is so cheerful?"

"Why is it remarkable?"

"Because it is his business to be in the dumps."

RESTRAINING THE SEA.

Emil Seidel, the mayor of Milwaukee, said in a recent after-dinner speech:

"Some people hold that alcohol is to blame for the poverty and wretchedness we see around us. That is like the view as one I heard put forth by a newsboy the other day.

"As I waited on a corner for a car, a bootblack said to a newsboy:

"'Bill, how is it the sea don't run over when all the rivers runs into it?'

"'Why, ye chump,' Bill answered, 'don't ye know the sea is full of sponges?'"

APPROPRIATE.

"She is such a stickler for the fitness of things that she named her dog Hamlet."

"How was that so fitting?"

"The dog is a Great Dane."

PROPELLERS FOR AIR CRAFT

English Engineers Now Are Turning Their Attention to Designing These and Solving Their Problems.

English engineers interested in the aeroplane are turning their attention sharply from the motor to the propeller of these air craft. Heretofore the builder has been between the two fires of cutting the weight of the motors to the limit and on the other hand forcing them to run at breaking speed in order to drive the ship. The average motor, turning the propeller screw, wastes 30 to 40 per cent. of its power on the propeller. That is, the propeller fails to make use of the power that is delivered to it by this wide margin.

In the building of propellers almost every possible pattern has been evolved and tested. But a test is not a test, for the reason that a certain propeller on one machine operated by an identical motor varies widely in results. At Lanark field trials recently two machines had identical motors and identical propellers, but one of these propellers making 200 fewer revolutions a minute, drove its machine ahead of its competitor.

The suspected trouble in the propeller is that differences in the polish, grain and physical molecular formations may allow the one piece of timber a closer "bite" on the atmosphere through which the aeroplane is driven. In speed the range of revolutions is from 450 to 1,100 a minute for propellers, the Wright models taking the lower speed. Three to seven strips of wood enter into a single propeller blade, glued into a whole under pressure. Who will discover first, after the technically accurate builder of a propeller has done his best to make two of like power, why it is that one may be excellent and the other a flat failure.

GREAT

First Kidnaper—Made a rich haul today. I stole the little son of the iceman.

Second Kidnaper—You'll have to wait till next summer for the ransom.

First Kidnaper—I know; but I intend to arrange to take it out in trade.

INTERESTING FIND.

Much interest is being taken in antiquarian circles in a gold collar of ancient design found in a fissure between the rocks, where a farmer was quarrying at Lisanover, county Cavan, Ireland. The collar is of pure gold, nearly crescent shaped, and weighs four ounces. It is artistically fashioned, with ornamental traceries, and hooked at the points, evidently for the purpose of attaching a chain, with which it was fastened round the neck. The lucky farmer has been offered large sums for his interesting find.

SPOILING THE BABY.

Margaret Sutton Briscoe, writing in Good Housekeeping, says there are signs of rebellion on the part of the mothers, that they are going back to the old-fashion of cuddling babies, and, despite the horror of the nurses, they even think of rocking him to sleep. Mothers are beginning to fear that, under the cold, systematic nursery system the affections are being neglected, and these they feel to be almost as important as the habits of the baby.

INVENTS A MONOPLANE.

Miss Sheila O'Neil is probably the only woman in the world who has invented a tandem monoplane. She has patented it, as well as many other inventions, and is now said to be at work on a splash device for motor cars. She did work as a nurse during the Boer war and has medals from both the king and queen for bravery.

ALAS! TOO TRUE.

"The world comes to him who waits," remarked the moralizer.

"True," rejoined the demoralizer, "but he is dead when it gets there."

PROMISING YOUTH.

"Is your son making much progress at college?"

"Oh, yes. He already has a pipe, a bulldog and a nickname."

BREAKING UP HOUSE

THAT IS WHAT EARL PERCY'S MOVING AMOUNTED TO.

Nobleman of Sixteenth Century Had Only One Set of Furniture for All the Places of Residence Which He Occupied.

Most of the Percy estates were so close together in the north, commerce was already so far developed, and the earl himself was so often absent on business of state, that his household was generally able to avoid any more serious displacement than the periodical migrations from Wressill to Leckinfield and back, a distance of some twenty miles. These flittings, however, turned everything upside down for a day or two. For the earl, like smaller men, had only one set of movables for all his residences; and, as surviving documents testify, he needed a far greater train for these periodical journeys than for the contingent of 523 men at whose head he served in the French campaign in 1513. Only the heaviest articles were permanent fixtures; all else must be transported—beds, chairs, tables, kitchen utensils, hangings for doors and walls, and even glass casements for the windows. This book throws a vivid light on such phrases as "the breaking up of my lord's house," or "his lordship set up his house again."

Sometimes there was a partial breakup without an actual move; when my lord "kept his secret house," dismissing the majority of his servants to live on board wages in the village, and retiring to a corner of his own castle for some such approach to the simple life as his modern descendant might enjoy in a Highland shooting box. The general migrations, when they came, followed a strict routine; each man had his specified share of horse and vehicle for himself and his belongings.

A single paragraph will show not only how carefully everything was organized beforehand, but also (what may be more unfamiliar to some readers) the very primitive sleeping arrangements which were common in the middle ages. "Item, it is ordained at every removal that the dean, subdean, priests, gentlemen and children of my lord's chapel, with the yeoman and groom of the vestry, shall have appointed them two carriages at every removal; viz., one for their beds; viz., for 6 priests 3 beds after 2 to a bed; for 10 gentlemen of the chapel 5 beds after 2 to a bed, and for 6 children 2 beds after 3 to a bed, and a bed for the yeoman and groom." Out of all the officers on these occasions, high and low, six only had a bed to themselves, and not one of the eight migratory priests was among these privileged few. We find even the sixth earl addressing his relative, Thomas Arundel, as "bedfellow"; for they had been servants together in Wolsey's stately household.—Harper's Magazine.

Mustaches Compulsory.

Mustaches have been made compulsory in the Austrian army, or, rather, an old ordinance has been revived by a rescript from the war ministry, it is said, on the personal wish of Emperor Francis Joseph. The original compulsory mustache order dates from before 1848, and its author was General Count Cyulai, the successor of the famous Radetzky in the war with the Italian states, who himself possessed an immense flowing mustach and who wanted every man in the army to grow one, too. The new order at the same time upholds the exclusive privilege enjoyed by the Windischgratz regiment of dragoons, which distinguished itself in the battle of Kolin, where Frederick the Great was defeated in 1757, in memory of which they were allowed to shave. Since then there has not been a mustache in the regiment.

Royal Poets of Great Britain.

By far the most famous and the best of our royal poets was James I. of Scotland. While a prisoner in Windsor Castle he composed his allegory, "The King's Quhair." It owed its origin to James' love for Lady Janes Beaufort, a beautiful young lady nearly allied to the royal family, and of whom he became enamored by seeing her from the window of his room as she walked in the garden. She afterward became his queen. Queen Elizabeth wrote poems in prison. The unfortunate Lady Jane Grey and her equally unfortunate cousin, Mary Queen of Scots both solaced their hours of captivity, destined to end on the scaffold, by learned studies.—T. P.'s Weekly.

Why He Prefers It.

Every now and then a true story of the little boy in Sunday school happens to go the rounds. Here is one:

Robert is the son of a Chestnut Hill lawyer. He went to Sunday school for the first time, and in the course of class instruction the teacher asked him where he wished to go when he died.

"I want to go to hell," said the boy blinking his eyes. "I know all about heaven—they're too stiff and stuck up for me up there, and, anyway, from what mother says, the devil seems to be better acquainted with little boys and girls than the angels are, and I do so hate to have to behave my bestest."—Philadelphia Times.

Place for the Wolf.

"New Yorkers are not really the extravagant and ostentatious lot they're made out," said Charles M. Schwab in a recent interview. "Why—"

Here Mr Schwab smiled.

"Why, even in Fifth avenue there is many a family that will have the wolf at the door this winter, only, for the sake of appearances, they'll coax him round to the back."

End of a Glorious Career.

Captain Cook had discovered the Sandwich islands.

"I want you to understand distinctly, though," he said to the natives, "that I'm not the doctor."

On the occasion of a subsequent visit there, however, the natives, having heard from Copenhagen in the meantime, gave him the disadvantage of the doubt and smashed him.