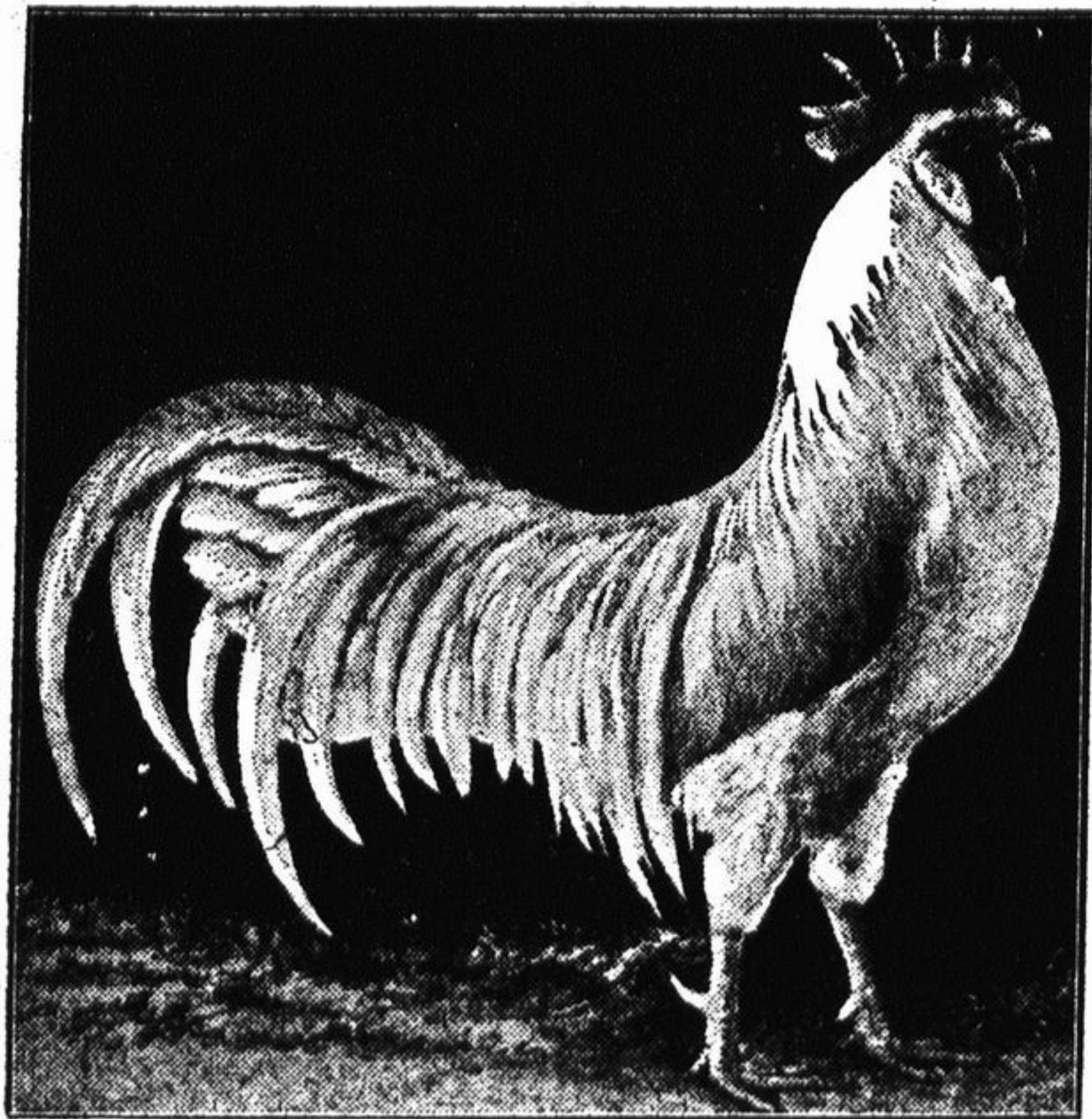


**IMPROVING LAYING QUALITIES OF FLOCK**



Single Comb White Plymouth Rock Cock.

(By MRS. C. G. LANE.)  
If you wish to improve your flock carefully, so you will know the hens that are the best layers, put these hens into a house by themselves, with a rooster for each 12 hens. Feed them a good variety of food, make them exercise, and use the eggs from this house for setting.

If this plan is followed from year to year, a great improvement will be made in the laying qualities of the flock.

If you are more especially raising poultry for market, then select your breeding hens for those qualities, and the improvement will be as great along those lines.

A great deal is heard these days about pure-bred poultry being so much better than scrubs, and they certainly are a great deal more profitable than the usual mixed flock.

It costs no more to keep a flock of pure breeds than one of mongrels, and a flock of beautiful, high-bred fowls look much better than one of all sizes, colors and conditions.

This is an advantage, for the pleasure of their beauty helps us to take more interest in caring for them.

As regards their being more profitable, the pure breeds bred for certain qualities are sure to have those qualities in greater degree than fowls raised without any regard to these points.

Thus fowls bred for generations from the best layers will lay more eggs than others where this care has not been taken and the same is true regarding the size, flesh and general table qualities. In the poultry business every extra egg and pound of flesh counts, so this alone makes a sufficient reason for good breeding.

There will also be in the pure-bred flock a uniformity of size, which makes a better looking crate of fowls to send to market and the eggs will be of the same size and coloring, which adds greatly to their appearance.

The farmer, in making a start in pure-bred fowls, if he buys from large poultry farms, should get what is called utility stock, instead of the fancy birds which are raised for show purposes.

The utility stock is just as well bred, and perhaps is better for practical purposes, but there is some little fault possibly in the color of a feather which disqualifies them for show purposes.

It need not be expensive to make the change from a flock of mongrels to pure-bred stock. By looking for the chance, one may often get a few old hens from a neighbor who has the desired breed. If this happens to be a neighborly neighbor he will not charge you much, if anything, in advance over the market price, when he disposes of his old hens to make room for his pullets.

While perhaps these old hens are not so profitable for him to keep as the younger ones, still, you can afford to keep them through the hatching season, for the sake of getting a start. Then buy somewhere a good rooster of the same breed to keep with them, and you have a good beginning.

Another way to get a start with pure-bred stock is to get a setting of eggs and raise the little chicks for the foundation of your flock.

If each year you keep all the pure-bred fowls by themselves during the breeding season and set all their eggs, selling off the mongrels as you raise the others to take their place, it will not be long before the entire flock will be changed, and the mongrels will have disappeared from your farm.

Don't neglect to introduce new blood into the flock by a change of cocks. Careless inbreeding will ruin the best flock that ever cackled.

Line breeding, if understood, can be practiced to advantage, but it is more trouble than the average farmer cares to take with poultry, and necessitates several different breeding pens and confining the fowls in them.

**BREEDING SEASON AT HAND**

Eggs Must Be Known to Be Fertile—See That Hen Is Properly Fed—Exercise Is Essential.

Setting time is far on the way. A few items may help the small poultryer to make a success of his period of incubation. First comes the study of the egg. It must be fertile and should be known to be this or much good time will be lost. Fertility comes from the male bird, the condition of the egg when it is put under the hen, and the condition of the hen herself largely determines the hatch. Back of the egg is the hen. She must be well fed, or, rather, properly fed, or she cannot produce an egg capable of carrying the germ to a successful hatch. Hens that are kept in too close quarters or in unhealthy quarters are not apt to lay eggs that will bring forth strong and healthy chicks. Hens that are troubled with lice are in no condition to produce good eggs. In a word, hens for producing eggs that are quite sure to hatch, must have fresh air, cleanliness, exercise and an assorted and balanced ration. Any exclusive feed, constantly given, will pall upon the hen and influence the egg for evil. Meats, clovers, green food of any wholesome kind are good with grain and soft foods. Fowls with free outdoor exercise are more apt to lay fertile eggs than hens that are kept confined.

**Have Extra Coop.**

It is well to have a single coop hanging in the breeding pen into which you can put the male for extra good feeding, as many males will not get enough to eat unless fed separately. It is also a good plan to have such a coop when you are making close matings—one male to two or three females. In such cases keep the male shut up each day except for a little while.

**Keep Chickens Busy.**

A head of cabbage or piece of meat hung on a string just above the chickens' heads will keep them busy for a long time.

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**VENTILATE THE HENHOUSE**

Cloth-Covered Window Will Permit Air to Pass Slowly Back and Forth Without Creating Draft.

A tree is the natural home of the hen. She was not intended to live in a house.

In housing a hen so that she will produce eggs during the winter, we have confined her in a home as tight and stuffy as our own. But unlike most humans, the hen wants fresh air more than she wants warmth.

In providing a home for the hen we should protect her against storms and cold winds but we should take care that we do not exclude fresh air and light.

One of the best systems of ventilation, according to J. G. Halpin, College of Agriculture of the University of Wisconsin, is a cloth-covered window which will allow air to pass slowly back and forth without a draft. The cloth should be stretched on a hinged frame so that the entire window may easily be opened. The window should be placed when possible on the south side of the poultry house. It will need to be open a large part of the time, being closed only during storms and on the coldest nights.

**Keep Dogs and Cats Away.**

Dogs, cats or other animals should never be allowed to visit the yard where the hens are kept. These animals will frighten the fowls and cause them to become wild and skittish. To get the best results from your hens you must keep them gentle and contented.

**Avoid Overcrowding.**

Do not crowd the growing stock. It is the surest way to develop roup. The chicks get overheated during the night and catch cold. Better let them roost out in the open than to keep them in too close quarters.

**Prevent Drafts.**

Cover the holes made in the poultry house for ventilating with coarse burlap. This will prevent drafts.

**GRADIENTS ARE STEEP**

CHILEAN TRANSDANEAN RAILROAD IS UNIQUE.

Line Follows Valley of Aconcagua River, Which Has Many Inequalities—Route to Europe Greatly Shortened by It.

A great contrast is afforded between the Buenos Aires and Pacific railroad from Buenos Aires to Mendoza, which rises only 2,405 feet in 639 miles, giving an average rise of less than one-tenth of one per cent, and the Chilean Transandean railroad, which rises 7,776 feet in a total length of only 44 miles. The highest point reached is 10,512 feet above sea level in the center of the international tunnel (10,390 feet long), which cuts through the watershed that forms the boundary between the two countries.

The line follows the valley of the Aconcagua river, the inequalities of the fall of which it more or less repeats, reaching in the upper sections a maximum gradient of eight per cent, the steepest in the world. The Argentine Transandean railroad is similar, and the same rack system is used; but the railroad ascends much more gradually up the course of the Mendoza river, the rise being 8,100 feet in a length of 111 miles and the maximum grade only six per cent.

The use of rack grades necessitates the strictest limitation of speed, no train being allowed to exceed nine and one-third miles an hour either up or down upon the rack, while safety is further insured by the provision on all trains of automatic brakes, non-automatic control brakes, repression brakes and hand brakes. Powerful double adhesion and rack locomotives are chiefly employed weighing ninety tons. That the precautions adopted to insure safety are efficacious is shown by the fact that since international traffic was started in 1910 not a single fatal accident has occurred.

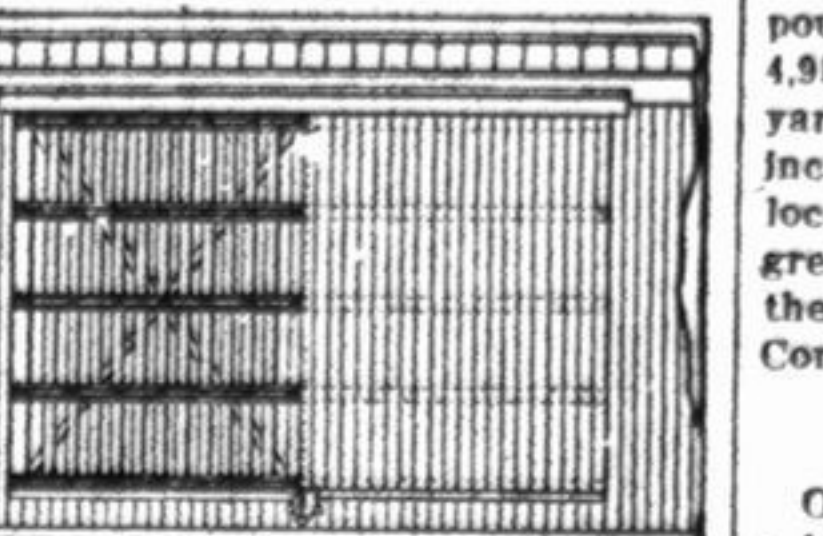
The distance by the Atlantic route from New York to Buenos Aires is about 5,670 miles, while that from New York to Valparaiso through the Panama canal is about 4,630 miles. The distance from Valparaiso to Buenos Aires by rail is 876 miles. By this railroad Chile has been brought nearer to Europe by ten to fifteen days and nearly 2,000 miles. The journey between the Chilean and Argentine capitals occupies now only thirty-six hours, as against the fifteen days that were occupied by the voyage through the Straits of Magellan, while the cost of the journey has been reduced from \$195 to \$62.

It is reported that commerce has been greatly stimulated by this shortening of distance and time and that not only has the easier journey increased the number of visitors, partly on pleasure, partly on business, with a corresponding increase in the inflow of foreign capital, but it has reduced the time required for correspondence and the transmission of postal parcels. The reduction of time on letters of credit results in a corresponding reduction of interest payable upon them. Notwithstanding all the advantages that have been made evident in the four years since this service commenced it is unquestionable that they could be developed to a far greater extent.

**IMPROVEMENT FOR CAR DOOR**

What Is Known as the Antifriction Skid Has Been Looked Upon With Much Favor.

This invention relates to an improved antifriction or glide door skid adapted for use with freight cars or the like having sliding doors, says the Scientific American, so as to be in-



Antifriction Door Skid.

terposed with relation to the doors and articles packed in the car in order to permit the door to be more readily opened and without the necessity of breaking or destroying the door and injuring the contents of the car.

**Long Record of Service.**

W. Hanley of Barby, near Selby, England, a signalman on the North-western railroad, has been 40 years in one signal box and has walked to and from his work 61,000 miles.

**Smoke Made into Gas.**

In a new Belgian smoke consumer for factories the smoke is driven by fans into a porous receptacle over which petroleum flows and is converted into a combustible gas.

**Street Lighting Lamps.**

A test by a Swiss city of the relative efficiency for street lighting of arc and metallic filament lamps was decided in favor of the latter, chiefly because more agreeable to the eyes.

**Electric Wire Molding.**

A new electric wire molding from Germany is made in two sections, the first being attached to a wall and the wires laid in it, after which the cover is sprung on.

**NEED MORE TRESPASS LAWS**

Number of Killed and Injured on Railroad Tracks of This Country Is Enormous.

The American mania for walking on railroad tracks cost over 50,000 lives in ten years from 1900 to 1910; 33,000 killed or injured were under twenty-one years of age—enough, says the bulletin of the Railway Business Association, "to make a mile post for every mile around the world."

Pointing to the fact that accidents of this sort for the same period in England amounted to only 11.5 per cent of the total in the United States, the Railway association seeks to lay the blame to the few and unenforced trespass laws in this country. Trespassers in England are fined \$10 for each offense. Trespassing on railroads in France is punishable by fines up to \$579 and by jail up to a month. In Germany the fine can be \$25. Canada provides fines as high as \$50 and imprisonment for two months.

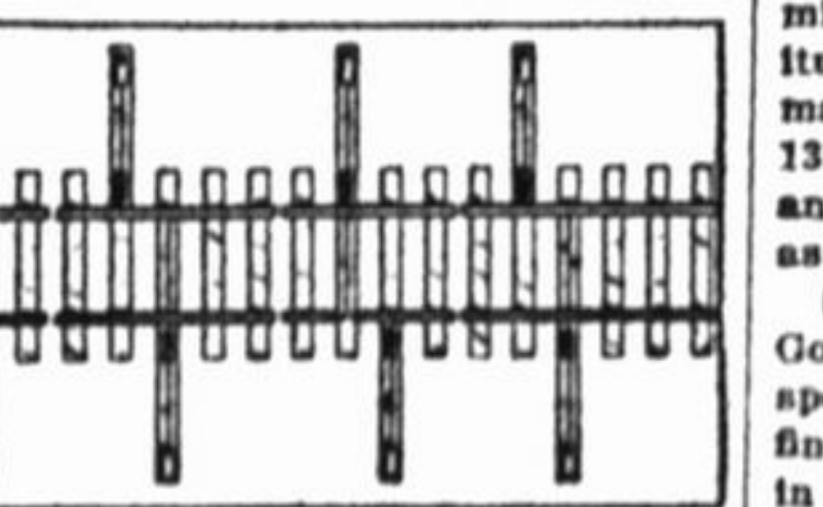
The bulletin forgets to state that in most European countries railroad lines provide far better protection against trespassing than in the United States. In England tracks are strongly fenced for miles and where fences end stout hedges take their place. Trains enter European cities underground or on elevated structures or stop at terminals in the suburbs. Train yards are well-nigh impenetrable.

Nevertheless it is true that these countries make strict rules and regulations to keep the public from taking risks on railroad property, while here 35 states have no laws which specifically prohibit walking on railroad right of way. This nation's death toll for a decade is too huge not to provoke comparisons.

**SIGNALS ARRANGED IN PAIRS**

Improved Idea for Automatic Train Control Recently Placed on the Market.

Among the objects of this invention is to provide a roadway with a continuous series of signals arranged in pairs, the signals of each pair being on opposite sides of the railroad track



Automatic Train Control.

and spaced at a distance equivalent to two blocks, the signals of the next pair being arranged to lap over or break joints with the preceding pair, whereby a reliable interlocking block signal system is provided.—Scientific American.

**Locomotive and Rail.**

At the meeting of the Institution of Mechanical Engineers in Paris last July, Anatole Mallet, the inventor of the Mallet articulated locomotive, called attention to the great changes that, during the past eighty-five years, have taken place in the relative weight of the locomotives to the rail. Monsieur Mallet showed that in 1829 engines that weighed five tons ran on rails that weighed 34.2 pounds a yard; that is the engine was 327 times the weight of the rail a yard. In 1846 engines of 22 tons ran on rails of 70.52 pounds a yard; that is, the engine was 709 times the weight of the rail a yard. Finally, in the United States, a Mallet engine with ten coupled axles, having 245 tons' adhesive weight, has been put into service on 111-pound rails; that is, the engine is 4,950 times the weight of the rail a yard. Incidentally, this progressive increase in the relative weight of the locomotive to the rail shows how great has been the improvement in the quality of steel rails.—Youth's Companion.

**Ravages of Rust.**

One large railroad system suffers a loss of more than eighteen tons of metal daily, due solely to the effect of rust. Thus far, the only known preventive is to keep the metal surface always covered with a suitable paint. Some idea of the costliness of this remedy, however, may be gained from the fact that it requires about \$5,000 annually to paint one large railway bridge alone. A typical case of this kind is the Forth bridge in Scotland, upon which a corps of painters are constantly employed, as the weather makes repainting of one end of this large structure necessary before the workers have reached the other. Although experiments have demonstrated that pure iron surrounded by oxygen does not rust, and that some acid, especially carbonic acid, is necessary for the production of rust, the secret of manufacturing rustless steel and iron remains to be discovered.

**Shooting Life Lines.**

A gun invented by a New Yorker for shooting life lines from ship to ship or ship to shore utilizes the power of what ordinarily would be the recoil to add to its effectiveness.

**Promotes Vegetation.**

The rapid growth of vegetation in polar regions, despite the brief summers, is attributed to the strength of the electric currents in the atmosphere.

**INTERNATIONAL SUNDAY SCHOOL LESSON**

(By E. O. SELLERS, Acting Director of Sunday School Course, Moody Bible Institute, Chicago.)

**LESSON FOR MARCH 21**

**JONATHAN AND HIS ARMOR-BEARER.**

LESSON TEXT—1 Samuel 14:1-12. GOLDEN TEXT—Let us put on the armor of light.—Rom. 13:12.

Samuel's review of his life of integrity, his charge to the Israelites, God's testimony of displeasure over their persistent desire to have a king, and Samuel's words of comfort and assurance as found in chapter 12, form an interesting connection with last Sunday's lesson. In chapter 13 we have the record of Israel again in distress and of Saul's folly in his assuming the priestly office (vv. 13, 14).

1. Saul's Distress, vv. 1-4. That Saul's disobedience, just indicated, had incurred God's displeasure, we know. It evidently had its effect upon the people also, for his army had dwindled during the intervening fifteen or eighteen years, from 330,000 (ch. 11:8) to a feeble 600 (v. 2). They were further handicapped by a lack of weapons (ch. 13:19-23). Deserted by Jehovah, by Samuel, Jehovah's priest, and by nearly all of his enthusiastic subjects (see 11:12) Saul was "in the uttermost part of Gibeath" hiding under a pomegranate tree (see vv. 11, 23 and 13:6). This may refer to his being at Rimmon (Judges 20:43-47). In this retirement Saul retains Ahiah (v. 3) as priest, thus keeping up the outward form of worship. This priest is not referred to as Jehovah's. He was a grandson of Phinehas, one of Eli's wicked sons, and as such was not to be a successor in the high priest's office (ch. 2:30-36). Such an outward form of "dead works" cannot take the place of a living faith. For Saul to consult the oracle of the Urim and Thummim worn by the priest and later to call up familiar spirits, shows his lack of spiritual apprehension. The references made to Saul's conduct (chapters 12, 13) are an indication of his character and emphasize the psalmist's words as found in Ps. 119:11, 105.

2. Jonathan's Victory, vv. 4-13. But God had one leader to whom he could speak, Jonathan, who is one of the finest and most attractive characters in the whole Bible. This episode is among the most brilliant in the history of the Israelitish nation. It was a brave deed, and an evidence of that triumphant faith shown so clearly in Jonathan's dealings with David. There seems to be a suggestion that Jonathan had lost confidence in his father, for neither he nor the people knew where Jonathan had gone. Verses 4 and 5 vividly picture the nature of the location wherein Jonathan undertook this feat. Jonathan clearly counted upon the fleshly covenant sign as ground upon which to expect help and victory over his enemies, who lacked such a sign (v. 6). The army of the Philistines had been divided into three sections (Ch. 13:17), and this gave Jonathan his opportunity. The garrison at Michmash was on the opposite side of the ravine from Gaba, Saul's headquarters. Hidden by the cliffs it was quite easy to approach the Philistines. It is an interesting and enlightening conversation recorded as ensuing on that journey.

Jonathan—It may be that the Lord will work for us; for there is no restraint to the Lord to save by many or by few (v. 6).  
Armorbearer—Do all that is in thine heart; behold I am with thee.  
Jonathan—We will pass over, and will discover ourselves.  
The test, as recorded in verses 9 and 10 was a real one and a revelation of Jonathan's shrewdness. Not to be invited up by the Philistines would suggest a desire they may have had to cover up any weakness. To be asked to "come" suggests their self-confidence.

Today's Message. Two young men of faith saved a nation sunk in despair and disgrace. They inspired confidence in God and his promises. "Youth for battles, old age for counsel," but there are times that demand action more than conference and consideration. Courage is only of value, however, when based upon much training, devotion to God, the interests of others, and a clear vision. It is not a mere flash in life's pathway. Courage is contagious; Jonathan's feat set on fire the soul of a nation. Read again the roll of honor in the eleventh chapter of Hebrews. The highest courage is not physical but moral. This courage is open to all, but it is intelligently grounded upon God's sure revelation in his word and in the person of his Son, our Lord. "And his armor-bearer after him."

Jonathan did not go alone. On the other hand it is not probable this young lad would have gone up those rocks had not Jonathan led the way; because one went before him, he was able to scale the fortress. God alone knows the heights to which we may attain, but does not ask us to go alone, nor expect us to do the impossible. The greatest heroes are not military, they are Christian heroes, who put on the Christian armor and whose "strength is the strength of ten because their hearts are pure." Such heroes are not dismayed at the contempt and gibes of the enemy.

**It's Foolish to Suffer**

You may be brave enough to stand backache, or headache, or dizziness. But if, in addition, urination is disordered, look out! If you don't try to fix your sick kidneys, you may fall into the clutches of kidney trouble before you know it. But if you live more carefully and help your kidneys with Doan's Kidney Pills, you can stop the pains you have and avoid future danger as well.

**An Illinois Case**

W. L. Parker, 6015 Monroe St., Charleston, Ill., says: "Doctors said I had a floating kidney. I had to get up at night to pass the kidney secretions and the burning sensation was severe. My sight was affected, too. Three boxes of Doan's Kidney Pills cured me and the cure has been permanent. I have told many people about it."

Get Doan's at Any Store, 50c a Box  
**DOAN'S KIDNEY PILLS**  
FOSTER-MILBURN CO., BUFFALO, N. Y.

**One-Hundred-Dollar Tree.**

The government has rewarded \$99.40 in payment for a single sugar pine tree that a trespasser cut in the Stanislaus National forest in California. It yielded more than enough actual lumber for a good-sized house, or for a two-foot board walk nearly two miles long. The tree scaled 18,933 board feet, and was valued at \$5.25 a thousand feet. Officers of the forest service believe that although national forest timber is frequently sold at a higher rate a foot, no other tree ever felled in a national forest has been worth so much.—Youth's Companion.

**Ever Happen to You?**

Bill—It is said there are 925 separate operations in the manufacture of a watch that sells for a dollar.  
Jill—Well, there are more than that when one has stopped and a fellow is trying to make it go.

Really Reliable.  
"Is your maid trustworthy?"  
"Trustworthy? Why, I even give her the key to the bread box!"



**Rheumatism**

Just put a few drops of Sloan's on the painful spot and the pain stops. It is really wonderful how quickly Sloan's acts. No need to rub it in—laid on lightly it penetrates to the bone and brings relief at once. Kills rheumatic pain instantly.

Mr. James B. Alexander of North Hampton, N. H., writes: "Many strokes in my back and hips brought on rheumatism in the winter. I had it on last one night when sitting in my chair, that I had to jump on my feet to get relief. I sat upon Sloan's Liniment to the affected part and in less than ten minutes it was perfectly gone. I think it is the best of all Liniments I have ever used."

**SLOAN'S LINIMENT Kills Pain**

At all Dealers, 25c.  
Send four cents in stamps for a TRIAL BOTTLE  
Dr. Earl S. Sloan, Inc.  
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Cut out cathartics and purgatives. They are brutal, harsh, unnecessary. Try CARTER'S LITTLE LIVER PILLS. Purely vegetable. Act gently on the liver, eliminate bile, and soothe the delicate membrane of the bowels. Free Constipation, Biliousness, Sick Head, Acids, Indigestion, as millions know. SMALL PILL, SMALL DOSE, SMALL PRICE. Genuine must bear Signature

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Will reduce Inflamed, Strained, Swollen Tendons, Ligaments, Muscles or Bruises. Stops the lameness and gains from a Splint, Side Bone or Bone Spavin. No blister, no hair膏. Home can be used. 25c a bottle delivered. Describe your case for special instructions and Book 1K Free.