

Rural Economy.

GRAIN FARMING IN EASTERN PENNSYLVANIA. IV.

Raising Roots receives very little attention in the grain growing districts. Potatoes are raised for the table, and the yield is quite as generous as in the Eastern States...

The Breeding of Horses is a common branch of business upon the grain farm, and generally pays well. They are not of any distinct breed, but are larger than those raised at the East.

Farming by Proxy is much more common than at the East. The land-owner, instead of renting his farm for a stipulated price, or upon shares, hires a foreman or farmer to oversee and board the laborers.

One of the great nuisances in the New England States and in the dairy regions generally, is the small size of the cultivated fields. One, two, and three acres lots are common, and ten acre lots and upward, are rare.

THE DOG PLAGUE.

GEORGE SNYDER, Rhinebeck, N. Y., writes us bitter complaints against the "dog plague." He has had his flocks four times destroyed by worthless curs; he has received "little pay" for them; the dog tax is not collected in many cases...

The most astounding statistics have been published, in various States, of the enormous annual destruction of sheep by dogs. The value of the property sacrificed would have more than furnished adequate sanitary supplies for all our armies during the rebellion.

"Dog laws," forsooth, are laughed out of our legislatures. They furnish excellent sport for the witty members—fast men, young lawyers, sleek merchants, city fops and demagogues who seek votes from the slums and dens where men, and dogs, and fleas, and other insects unmentionable, cuddle lovingly together.

The farmers are a patient generation. They vote for their principles (or their party) irrespective of private griefs. If half a dozen of them, in almost any election district, would go personally to a candidate for a legislative nomination on their own side, and ask him, "Will you if nominated and elected, vote for a reasonable law to abate the dog nuisance?..."

DON'T KILL THE MOLES.

A correspondent of the Dayton Daily Journal communicates to that paper the following, which should be decisive on the question of mole-killing: Some time since I had the honor of addressing you a note on the "Mole," which you had the kindness to publish in your journal...

UTILITY OF MOLES.

"An interesting experiment, which shows the service rendered to agriculturists by moles, and the impolicy of destroying these little quadrupeds, has been made. In a commune of a canton of Zurich, in Switzerland, the municipal council were about to proceed to the election of a mole-catcher...

CREEPING THINGS.

A writer in the Moravian thus naively discourses about insects: All insects have six legs, unless they have met with accidents such as you have often seen when you have caught a grasshopper to see him "make molasses."

wounds and give him a fresh start in life with a Palmer Log. They do not breathe through their mouths, but by means of a great number of little pipes which run through them lengthwise, like the gas pipes under the streets, having openings here and there on the side of the body, where the fresh air is drawn in. These little openings are very curiously contrived, in some cases being protected by tiny trap-doors opening on hinges, in others having a strong grating over them of coarse hairs.

Scientific.

A MATHEMATICAL REFUTATION OF HUME'S ARGUMENT AGAINST MIRACLES.

DETROIT, August 8th, 1867.

TO THE EDITOR OF THE AMERICAN PRESBYTERIAN:

REV. AND DEAR SIR:—I forward to you, for the columns of your valuable paper, an article that may interest a portion of your readers, and is worthy of preservation and presentation to the public, as well for the merited fame of its loyal and excellent author, as for its intrinsic worth.

Gen. CASEY'S mathematical refutation of Hume's objection against the credibility of a miracle is as follows:

No argument against the truth of miracles exacted greater attention in its day, nor produced more attempts to refute it, than the celebrated aphorism of Hume, viz: "No testimony is sufficient to establish a miracle, unless the testimony be of such a kind that its falsehood would be more miraculous than the fact which it endeavors to establish."

Following the method of BABBAGE, it can be shown that Hume's condition of proof can be mathematically satisfied.

I will premise that the examination of these conditions depends upon the science of probabilities, the results of which, as explained by La Place, Poisson, De Morgan and others, are universally admitted by the scientific world.

We will suppose the miracle of a man being raised from the dead, and the question will present itself in this form, viz: Can a sufficient number of witnesses be produced, whose concurrent testimony (without collusion) will, by the principles of the science of probabilities, satisfy the condition of Hume?

I shall not attempt now to discuss the proofs by which the principles of this science are established; but will merely state that the mathematical probability or improbability of an event transpiring is expressed by a fraction, the sum of which fractions is always equal to unity.

Let the probability of an event be expressed by the fraction $\frac{1}{m+1}$. Let m represent the number of persons who have died without any one having risen again. The improbability of the $(m+1)^{th}$ rising from the dead will be represented by $\frac{1}{m+1}$ and will represent (independent of testimony) the probability that the $(m+1)^{th}$ person who died arose again.

Now, either the event did happen [the $(m+1)^{th}$ person who died, arose from the dead], and the witnesses agree in speaking the truth, the probability of their concurrence being represented by $(\frac{1}{m+1})^m$ that of the hypothesis being $\frac{1}{m+1}$; or, the event did not happen, and the witnesses agree in falsehood, the probability of their concurrence being expressed by $(\frac{1}{2})^m$ that of the hypothesis being $\frac{1}{m+1}$.

The probability of the witnesses speaking the truth, and of the event occurring is therefore, $\frac{1}{2} (\frac{1}{m+1})^m + (\frac{1}{m+1}) \frac{1}{m+1}$

$$\frac{m+1}{(p-1)^m + m+1} < \frac{1}{m+2}$$
$$\frac{(m+1)(m+2) < (p-1)^m + m+1}{(p-1)^m > (m+1)(m+2) - (m+1)}$$
$$\frac{p-1 > (m+1)^2}{n \log(p-1) > 2 \log(m+2)}$$
$$n > \frac{2 \log(m+1)}{\log(p-1)}$$

In order to satisfy this logarithmic formula p must be greater than 2, that is, the witnesses must be more liable to tell the truth than a falsehood; for if p was equal to 2, the denominator of the fraction would become 2 zero, and consequently it would require an infinite number of witnesses to satisfy the condition.

Let us suppose that each witness state one falsehood for every ten truths. p=11. M=1,000,000,000,000. One trillion.

$$n > \frac{2 \log(10+1)}{\log 10} > 24$$

or twenty-five witnesses are sufficient. If the witnesses state one falsehood for each one hundred truths, p=101.

$$n > \frac{2 \log(10+1)}{\log 100} > 12$$

or thirteen witnesses are sufficient.

Advertisements.

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GRACE'S CELEBRATED SALVE. From Mr. E. TRUCKER, Depot master at Salisbury, Mass. "I have been troubled for years with a bad humor; sometimes outwardly, and sometimes inwardly. During the past summer it manifested itself more than usual outwardly, and I used your Salve. All signs of it have since disappeared, without affecting me inwardly, indicating, I think, the eradicating nature of the Salve."

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