

The Atmosphere and its Effects upon Animal Life.

A very interesting lecture was delivered on the 11th inst. by Dr. Griscom, at the New York Mechanics' Institute, on the "Influence of Air in connection with Animal Life." The lecturer commenced by saying that he supposed some of them would be surprised to hear that they lived at the bottom of an immense ocean of air fifty miles deep; yet it was so, and the color of the ocean which is called the atmosphere, is a deep cerulean blue. To perceive this color it was necessary to be able to see at once the whole volume, and also on a calm and clear day, for no color could be perceived if seen in small quantities, or when there was either wind or haziness. In like manner the color of water could not be seen in small quantities, and was only perceptible where there was a vast expanse of ocean. The air was also a substance capable of condensation and expansion. Its expansion was seen in the winds, by which ships were made to traverse the ocean, and also windmills. The tornado was another phase of its expansion, by which trees were uprooted and houses overturned; and was almost equal to the power of steam. The greatest weight of the atmosphere was fifteen pounds to the square inch, and this weight presses on every way, both upward and downward. To explain the pressure upward, the lecturer exhausted the air out of a large vase, which then remained fast to the plate on which it stood, but upon the air being let in, it was easily removed. I remember said he, being asked the question, if there is a pressure of fifteen pounds to the square inch, the reason why we were not at once crushed by the weight; but this is, as I before explained, because the air presses in all directions with the same equal force, and hence there is an equilibrium. This is a most important element, and one that requires to be known, and also that the air never presses more than fifteen pounds to the square inch.

The next quality of the air is elasticity. Press it, to make it occupy a smaller space than it otherwise would, and then take away the weight, and it comes back and occupies its original space. The lecturer then explained that in the air there were two gases: one oxygen, which is that part of the atmosphere by which chiefly we live, and which is the one-fifth part; and the other nitrogen, which is four-fifths of the atmosphere. Oxygen supports life and combustion, and nitrogen restrains its effects and dulls its operations. The quantity of air which a person consumes depends in a measure on one's self, and by training can be made more or less. The tailor and shoemaker take little in comparison with the laborer, and the public speaker or singer; or those who cry commodities for sale through the streets. A man in good health makes eighteen respirations in a minute, and in twenty-four hours consumes fifty-one hogsheads of the air. As the oxygen which supports life is small, we ought to be very particular how we permit other gases to mix with it and vitiate it. The blood when it enters the lungs, is black, but when the oxygen acts on it, it becomes red, and is sent through the veins to impart life and animation. This black blood is produced by carbon, and imparts the blackness which we see in the face of persons who lose their lives by suffocation, because the air was not allowed to reach the lungs to purify it. When we send out the air from the lungs we do not send it in the same manner as we inhaled it, for when exhaled it is as deadly a poison as arsenic or corrosive sublimate. The lecturer showed this by experiments, and filled a vase with his own breath in which a lighted candle would not live. It was

such air killed persons who went down into wells in the country, or died when a pan of charcoal was placed in a room. The danger of taking impure matter into the stomach was not so great as into the lungs, for the stomach had power to eject impurities which the lungs had not. Besides the impure air which we exhale there are 2,800 pores on every square inch of the body, and to a body of a large size there are 2,590 square inches; and those multiplied make 7,000,000 of pores. There is a sort of drainage pipe in the body, which sends out matter as well as gas, and this pipe is calculated at twenty-eight miles long. The particles of matter which are sent out and which do not dissolve, are so numerous, that in China, where the houses are low, and a great many persons are in the habit of assembling in one room, it has been discovered that after fifteen or twenty years, these particles adhere to the ceiling of the rooms, so that farmers will contract to put up a new ceiling if they are allowed to take down the old one, so valuable has it been found for manure. —Scientific American.

Wheat Culture of Ohio

Ohio produces annually about TWENTY FIVE MILLIONS OF BUSHELS OF Wheat. Three successive crops were as follows:

Crop of 1849,.....	16,000,000
Crop of 1850,.....	35,000,000
Crop of 1851,.....	25,000,000
Aggregate,.....	76,000,000
Average,.....	25,333,333

These crops were accurately ascertained, that of 1849, under the United States; that of 1850 and 1851, by the State Assessors. One is the worst crop in many years, (that of 1849;) and one (that of 1850,) the best; so that, on the whole, the AVERAGE is a fair one. The crops of 1852 and 1853; will not be far from that of 1851,—that is an average.

There is nothing less understood, than what is really an AVERAGE crop of any staple grain. We hear continually from 70 and 80 bushels of corn to an acre, as if that were the common crop; and of 40 bushels of wheat per acre in England, as if that were the common crop in that country; but in fact it is no such thing. An average crop for an entire country, must include all varieties of soil as well as all varieties of seasons. In some seasons, the crop fails almost entirely; and one kind of soil, will not produce half as much as another.

We have looked over the Agricultural Report of the State Society, for the purpose of ascertaining the general average of wheat production.—In the first place, we looked at the the PREMIUM CROPS, which were as follows:

Ashland co. 45 bush.—70 lbs per bush.
Perry " 46 " 65 "
Athens " 45 1/2 " 61 "
Lorain " 31 " 60 "
Defiance " 43 1/2 " " "
Stark " 48 " " "
Erie " 41 " " "
Carroll " 39 1/2 " " "
Champ'gn " 39 1/2 " " "
Wash'ton " 36 1/2 " " "

The PREMIUM crop of Ashland was equal to 52 1/2 bushels per acre, at the Statute Weight, which is 60 lbs per bushels. The PREMIUM crop of Perry was equal to 49 1/2 bushels, and the PREMIUM crop of Athens to 46 bushels per acre. We can easily see, therefore, how, on suitable land, and high culture, a crop of 40 bushels per acre may occasionally be raised; but it is not a common thing, either in England or America. Let us now look at some of the COUNTY AVERAGES. We will take FIVE of the HIGHEST average, and FIVE of the LOWEST.—Thus:

Erie.....	24 bushels
Montgomery.....	22 "
Champaign.....	20 1/2 "
Seneca.....	21 1/2 "

Ashland.....	20 "
Jackson.....	18 "
Pike.....	9 "
Lawrence.....	9 "
Vinton.....	9 "
Washington.....	12 "

We see, therefore, there is a very great difference between the average of the best counties and the worst.

The AVERAGE production of the entire State of Ohio, does not reach 16 bushels per acre. Let us next enquire into the cost of production.

The actual cost of plowing, seeding, harrowing, cutting and threshing an acre of PREMIUM wheat in Brown county, was \$6.90 per acre. The actual cost of NINE acres of PREMIUM wheat in Defiance county, was \$71.75; making about \$8 per acre. In the former case, the produce was 40 bushels per acre, and the cost 33 cents per bushels. In the later case, the product was 369 bushels, or, 41 bushels per acre. The cost, therefore, was about 20 cents per bushel. We infer that the actual cost of the wheat production, independent of the interest of capital invested, and the charges of Government, is not more than 20 cents per bushel. If the crop be only a common one it is because it is less manured and cultivated.—In other words, it has cost less. An average production of 16 bushels per acre, does not cost over \$3.25 per acre. But, the interest of capital, at \$30 per acre, is \$1.80 per acre. The charges of government are about 30 cents per acre. The total charges therefore, are \$3.25 per acre. The product is 16 bushels per acre, which at 60 cents, is \$9.60. With an average of 16 bushels per acre, and a price of 60 cts. per bushel, wheat is a profitable crop. This corresponds with a remark made by farmers, that wheat may be raised profitably in Ohio at 50 cents per bushel; but not under. The whole cost per bushel, as we have seen above, is less than 33 cents per bushel. But wheat culture on bottom lands, or without the aid of rotation crops, would soon cease to be profitable. It is not calculated to do well, without rotation; nor does it suit alluvial land, as well as Indian corn.

Of the 25,000,000 bushels of wheat raised in Ohio, at least THIRTEEN MILLION IS SURPLUS, which at 70 cents per bushel, is worth over \$9,100,000! Notwithstanding this immense and valuable crop is actually raised in this State, yet the traveler on our railroads would scarcely suspect its existence. Not one twentieth part of the State is occupied by wheat, while all around, the stranger sees heavy forests yet occupying the ground. The whole cultivated land of Ohio is only about 1-5th part.—R. R. Record

PRINCIPLE OF THE MAINE LAW.—This law embodies no new principles of legislation, but is simply a new application of principles as old as legislation itself, and often embodied and applied in previous legislation on this as well as on other subjects in this State, and is based upon a principle at the foundation of society, to wit, that society has a right to protect itself, and that public welfare is paramount to personal interest or individual gratification.

A celebrated toper, intending to go to a masked ball, consulted an acquaintance in what character he should disguise himself. "Go sober," replied his friend, "and your most intimate friends will not know you."

"Mr. Smith, don't you think Mr. Skeesicks is a young man of parts?" "Decidedly so, Miss Brown, he is part numskull, part knave, and part fool."

A TAVERN.—The Devil's drawing-room, as an ale-house is his kitchen.

Much Labor on Little Land.

The Farmer's Companion, in an article on "Small Farms," marks out the following course for the farmer of small capital to pursue:

You have one hundred acres clear, fifty of which you keep for pasture and for meadow. Make up your mind to work only twenty-five acres; the other twenty-five being put down to clover and timothy, as you best can. You have manure enough in and about your farm for six acres. This year haul that on to your land, plough it, and put in corn, with little ashes, and if you can get it, slaked lime or plaster to every hill. Plough twice as deep as usual, and drag twice as long, with a long-toothed drag, till the land is like a garden. If you have got thirty-five bushels of corn to the acre before, we can warrant you now, seventy or eighty; for you cultivate and hoe the corn twice as much likewise. You double your crop at a very little increased cost. Having no more manure, you must depend on deeper ploughing and better dragging for the other ten acres for this year, not forgetting to sow a little more seed than usual, if it is oats or barley. In the fall, sow wheat where the corn was, with the same care, and next Spring, manure the next six acres for corn. Yes, but you may manure the ten or twelve acres; for you have had twenty-five more acres for hay, or oat straw cut green for fodder, and can keep twenty-five more cows for the winter; and knowing the value of the manure, that it is as important to you as the very sod itself, you will take much better care of it.

Thus, every two or three years, all your land will get a dressing of manure, and every year you will have a different crop on it. Every year it will improve; and you grow rich with about half your work. But after a while, sow a few acres of this land with clover and timothy, and break up as much of your old grass. You will get double the crop of hay on the piece, and a good crop of grain on the old piece. In one word, of all men in the world, a farmer should work a small piece of land; work it thoroughly; keep all the stock he can to make manure; keep the manure dry; and he will not be a small farmer long. We have tried it, and we know it. For the rest, take and read a good farmers' newspaper.

Cylinder Telegraph.

A company is now being formed, with a capital of \$500,000, for the purpose of constructing a line of telegraphs from Boston to New York, having a cylinder two feet in diameter, by means of which, it is believed, packages may be transmitted from one city to the other in fifteen minutes. It has been objected by some, that the power required to exhaust the tube for so great a distance, would be so great, that no reasonable number of pumps would be able to accomplish it. But this objection is met by the fact, that it is not proposed by the plan of Mr. R. to exhaust the air through the whole length of the tube, at once; but as a portion of the air is exhausted and the plunger rushes through the tube, the air is cut off behind it, and a new column of air commences to act upon it. The scheme is attracting favor.—Boston Traveller.

WIDOWS AS PRINTERS.—The Pittsburgh "Gazette" says the attempt to introduce women as compositors in that city, has been remarkably successful, and that widows make the most rapid advancement, "as their intellects are more mature, and their knowledge superior to that of most boys when they commence an apprenticeship to the printing business." Besides this, we presume their previous experience in small caps, bodkins, washing forms, and press work generally, has already initiated them in several of the details of the craft.