

"How do they explain the wonderful difference in the chemical and physical properties of matter"? That is yet to be solved but the nucleus theory seems to be pretty well established.

That reminds me of the nucleus theory of the evolution of living beings. This poem was not written by W. J. Bryan. It is a song supposed to be sung by a protozoan of some kind.

I was a rhizopod with protoplasmic cells  
 I had a little nucleus and I had nothing else,  
 Since then a man I've grown by evolution's power,  
 But Oh! my little nucleus, I miss thee every hour.

I have taken sufficient time to relate some ideas and impressions of what we consider to be the great progress of the science to which we belong. As I was listening to our President's paper, I was wondering, after all these years of activity, what there could be for this association to do, but when I heard him say that there was no uniformity nor likeness of activity in regard to that one little thing, the determination of calcium requirements of the soil, I felt that the task before this association is still just as great as it was at the beginning. In other words, the field of knowledge is so broad, compared with that which we know, that no matter how rapidly we progress or what distinguished attainments we reach in this science, the unknown will always be before us, offering still endless fields and opportunities for investigation. So there is no end to the good which this association may do. It is boundless in its activities and in its field of endeavour, and so I want to say that we should never be satisfied to think that we have learned it all but keep that humble attribute which is the characteristic of a scientific mind, perfect humility even in the attainment of the great progress which we have made. That is the reason why the really scientific man is never proud of what has been accomplished but always bows in humility before the Great Unknown—whether he calls it God or Jehovah or Nature or by any another name.

### **The Moon in Agriculture.**

Although the influence of the Moon over Agricultural and similar operations has long been recognised in a general sense, and a complicated and more or less mystical lore and tradition built up from it appears very doubtful whether sufficient devotion has been paid, especially in this country, to the study of how this influence can best be turned to good account, and to what extent and on what operations it actually prevails.

The subject has been looked into with some attention in U. S. Columbia and it is generally recognised there that no timber for Mining, Building or Railway or other purposes of the kind may be cut at all during the full of the Moon, as timber cut at that time rapidly becomes subject to the attacks of a certain species of wood-boring insect which renders it unfit for use, occasionally in the remarkably short period of twelve months. This fact is so well-known and proved that wood cutters are fined by their employers for cutting timber at the incorrect period—only the first quarter of the Moon being considered suitable. Tests for the best days of that quarter are made by cutting incisions in the bark of various trees and creepers such as *Busimun Oalactodendron* and *V. Cariboea* to observe the sap flow. When the sap flow is at its minimum it is judged to be the correct time to cut timber.

The same belief exists in Trinidad, and in Assam the custom of never cutting Bamboos until after full Moon prevails amongst certain peoples, since if they are cut when the Moon is on the wax the borer insect speedily reduces them to powder.

Whether it is as has been suggested that the life-cycles of the borers coincide with the phases of the Moon, or what is much more likely, that a Moon-influenced atmospheric tide affects the sap flow and root-pressure and thus influences insect life concerned with the tree or plant, is not accurately known at present, though the latter appears extremely probable.

If a graph is made on almost any Tea Estate, showing the number of units of Green leaf plucked per week, and also the number of weeks in the plucking season, other factors such as cessations or plucking or changes in the age of the leaf being equal, the highest points of the curves reached will be found almost invariably to correspond approximately with the phase of full Moon, thus practically proving the supposition of an atmospheric tide drawing the sap which finds its expression in the leaves of the Tea Bushes.

Here then would appear ample opportunity for careful investigation on scientific lines as to the exact optimum period when the soil should be cultivated intensively in order to synchronise the two great leaf-forcing operations upon which dependence may be placed *i. e.*, that of aerating the soil by hoeing and the attraction of sap by the Moon, which would presumably profit the Tea Planter very considerably if he has reserves of labour to throw into the best leaf producing areas of garden at the correct moment.

The Olive planters of the Riviera are well aware of the utility of studying the Moon's condition when grafting is in progress, and no grafting is carried out save at the full of the Moon.

Since the dawn of language the influence of the Moon over the mind of man has been recognised and over the growth of animals since the days of Aristotle. To-day many a Norfolk peasant will only boil his pork before full Moon and never after it ! Indeed from superstition to fact, the Moon's influence over the affairs of men and things is firmly established and it only remains for us to turn it to the best account like all the other forces of Nature.

[*H. S. L. D. Ind. Sc. Agriculturist, Nov '23.*]

---

### **The Successful Farmer.**

---

From the alacrity and frequency with which retired men and others with little knowledge of farming, and with a questionable desire and capacity for hard work, assume they can become farmers, it would seem that the faculty for hard work is but a subsidiary attribute of a farmer.

It may be that a man with little aptitude for hard work may become a farmer, but there is little likelihood of his becoming a successful one under present circumstances. Experience to-day shows that the only farmer who is really successful is he who possesses an unlimited capacity for keeping a grip of things. Apart from those unfortunate farmers who plunged too heavily during the boom and are not yet out of the mire, the man who is not making a success of his farming operations to-day is, in many cases, he who has little inclination for hard work. Investigation in this country and others shows that farming in general is not a business with big monetary returns, nor is the rate of interest in the investment high. If therefore the overhead charges are unduly high and production is low, as they are very liable to be when the farmer is merely a looker on—and perhaps only an occasional one at that—then the chances of producing at a profit are very small indeed.

The pioneer stage of farming in South Africa, when success came to those who were ready to make the most of their opportunities, is now passing. The man now entering upon farming in this country and those already in it, unless they have a substantial backing