

	Moist.	1st Period.	2nd Period.	3rd Period.
Nitrate . . .	49 parts per million of dry soil	53	69	69
Increase as percentage of initial concentration	..	8.2	40.8	40.8

These results and others which arose in the course of an investigation into the presence of phenols in the soil, and the observations of Hall and Miller, already quoted, led us to carry out a series of experiments in which attempts were made to aerate the soil under different temperature conditions, and to determine whether any volatilisation of ammonia could be detected.

The results of the first series, carried out with dry air at room temperature, are given below. The dehydration of the soil in these took place slowly.

Soil.	Crop.	Season.	Pr.	Total NH ₃ .	Soluble NH ₃ .	Volatile NH ₃ .	Moisture lost during Dehydration as per cent. of Dry Soil.
Forest	Tsuga	Winter	5	p.p.m. 5.7	2.1	1.45	30
"	Corsican						
"	Pine	Spring	4	4.95	1.5	.2	35
"	Oak	Spring	7	2.4	.8	.8	30
"	Larch	Summer	4	8.8	4.8	.2	41

The second series were carried out with different soils and the aeration was effected by a current of dry air, the temperature of this and of the soil being maintained above 50° C.

Soil.	Crop.	Volatile NH ₃ , Parts per million of Dry Soil.	Moisture lost during Dehydration as per cent. of Dry Soil.
Egypt .	Cotton	1.1	15
Chalk .	Barley	.5	12
Marlstone	Pasture	.5	31
V. rich			
Hothouse	..	1.5	62

These figures again show a considerable amount of ammonia volatilised from the soil.

An apparatus is in the process of construction which will deal with large quantities of soil, and it is hoped, will enable an extended series of observations to be made with soils of different types and at different temperatures.

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Robert Browning as an Exponent of Research.

I HAVE read with delight Mr. Lamplugh's glowing appreciation (NATURE, February 28) of Browning's sympathy with scientific thought, and I agree with every word except that one searches vainly in "Paracelsus" for any clear appreciation of scientific research. For more than forty years I have felt that that poem breathes throughout the very spirit of scientific enthusiasm which is the mainspring of research. Paracelsus first "aspires"

To contemplate undazzled some one truth,
Its bearings and effects alone—at once
What was a speck expands into a star,
Asking a life to pass exploring thus.

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When he "attains" fame in the world he is struck with fear that his ideals may have declined with his lost youth and hopes, and exclaims:

. . . Would I were sure to win
Some startling secret in their stead, a tincture
Of force to flush old age with youth, or breed
Gold, or imprison moonbeams till they change
To opal shafts!—only that, hurling it
Indignant back, I might convince myself
My aims remained supreme and pure as ever!

In mature age he "aspires" again, looking back over more disappointments than triumphs, and the old passion swells up once more, struggling under the rein of reason.

And I betake myself to study again
Till patient searchings after hidden lore
Half wring some bright truth from its prison; my frame
Trembles, my forehead's veins swell out, my hair
Tingles for triumph. Slow and sure the morn
Shall break on my pent room and dwindling lamp
And furnace dead, and scattered earths and ores;
When, with a failing heart and throbbing brow,
I must review my captured truth, sum up
Its value, trace what ends to what begins,
Its present power with its eventual bearings,
Latent affinities, the views it opens,
And its full length in perfecting my scheme.
I view it sternly circumscribed, cast down
From the high place my fond hopes yielded it,
Proved worthless. . . .

Finally, when he "attains" to wisdom while dying in poverty and neglect, Paracelsus, "the searching and impetuous soul," reviews his career of discovery and traces the course of Nature from the time when

The centre fire heaves underneath the Earth
And the Earth changes like a human face,

and onward in a fine description of the origin of land, the advent of plants and animals and their development,

Suggesting some one creature yet to make,
Some point where all those scattered rays should meet
Convergent in the faculties of man.

Surely this is not only appreciative but prescient also of scientific thought, for Browning wrote the poem in 1835 when Darwin was still sailing the seas, an unknown assistant-surgeon on the *Beagle*.

HUGH ROBERT MILL.

February 28.

The Translation of Helmholtz's Physiological Optics.

THE reviewer of Helmholtz's "Physiological Optics" (NATURE, December 20, 1924, p. 887) remarks, "at last a deep reproach has been lifted from the record of English scientific literature."

Nearly quarter of a century ago (on returning from three years' work in a German scientific institution), I proposed to Messrs. Longmans that I should write a translation for them to publish. They agreed, and secured the services of Sir Michael Foster to edit the work, and bring it up-to-date. Sir William Abney and other scientists warmly supported the idea. The German publishers also were quite willing, and agreed to lend their clichés. The scheme fell through because the heirs of von Helmholtz, after long delay, refused to grant the rights of translation, acting on the advice of Prof. Arthur König. I forget the exact terms of König's letter, but it was to the effect that the book dealt with researches which had not been completed, and therefore it would be unfair to the memory of von Helmholtz to allow it to be presented to English readers as representative of his work.

ALICE EVERETT.

Teddington, Middlesex,
February 17.