ity, law, medicine and education) 577 men and 669 women, a total of 1,246; and excluding duplications, the registration for the entire university amounts to 1,696 men and 1,598 women—a grand total of 3,294.

DR. A. I. RINGER, instructor in physiological chemistry at the University of Pennsylvania, has been elected assistant professor in physiological chemistry in the University of Pennsylvania School of Medicine.

DR. EUGEN VON HIPPEL, of Halle, has been called to the chair of ophthalmology at Göttingen, in succession to his father, Dr. Arthur von Hippel, who retires at the close of the present semester.

DR. FRANZ KEIBEL, of Freiburg, has been called to the chair of anatomy at Strassburg, as the successor of Professor G. A. Schwalbe.

DISCUSSION AND CORRESPONDENCE

TIN DISEASE AND POLAR EXPLORATION

IT will be recalled that the Scott and Amundsen Antarctic expeditions were greatly handicapped by losing their petrol. Amundsen stated in one of his lectures in America that their petrol tins required frequent resoldering. According to the diary left by Captain Scott this "mysterious loss of petrol" was one of the chief contributory factors in their failure to return to safety.

In Scott's diary[1] of the return journey under date of February 24, 1912, he states:

> Found store in order except shortage oil—shall have to be *very* saving with fuel—. . . . Wish we had more fuel.

Again on February 26 he states:

> The fuel shortage still an anxiety. . . . Fuel is woefully short.

On March 2:

> We marched to the (Middle Barrier) depot fairly easily yesterday afternoon, and since that have suffered three distinct blows which have placed us in a bad position. First, we found a shortage of oil; with most rigid economy it can scarce carry us to the next depot on this surface (71 miles away).

[1] "Scott's Last Expedition," Scott, Huxley and Markham, p. 398.

March 4:

> We can expect little from man now except the possibility of extra food at the next depot. It will be real bad if we get there and find the same shortage of oil.

On March 7:

> If there is a shortage of oil again we can have little hope.

In his message to the public Scott says:

> We should have got through in spite of the weather but for the sickening of a second companion, Captain Oates, and a shortage of fuel in our depots for which I can not account. . . .

In Note 26 of the Appendix, the authors, Huxley and Markham, state:

> At this, the barrier stage of the return journey, the southern party were in want of more oil than they found at the depots. Owing partly to the severe conditions, but still more to the delays imposed by their sick comrades, they reached the full limit of time allowed for between depots. The cold was unexpected, and at the same time the actual amount of oil found at the depots was less than they had counted on. . . .
>
> As to the cause of the shortage, the tins of oil at the depot had been exposed to extreme conditions of heat and cold. The oil was specially volatile, and in the warmth of the sun (for the tins were regularly set in an accessible place on the top of the cairns) tended to become vapor and escape through the stoppers even without damage to the tins. This process was much accelerated by the reason that the leather washers about the stoppers had perished in the great cold. Dr. Atkinson gives two striking examples of this.
>
> 1. Eight one-gallon tins in a wooden case, intended for a depot at Cape Crozier, had been put out in September, 1911. They were snowed up; and when examined in December, 1912, showed three tins full, three empty, one a third full, and one two thirds full.
>
> 2. When the search party reached One Ton Camp in November, 1912, they found that some of the food, stacked in a canvas "tank" at the foot of the cairn, was quite oily from the spontaneous leakage of the tins seven feet above it on the top of the cairn.
>
> The tins at the depots awaiting the southern party had of course been opened and the due amount to be taken measured out by the supporting parties on their way back. However carefully

re-stoppered, they were still liable to the unexpected evaporation and leakage already described. Hence, without any manner of doubt, the shortage which struck the southern party so hard.

That the oil could have soaked the supplies placed seven feet below the oil tins by escaping through the stopper in the form of vapor, seems impossible. A possible and very plausible explanation of this leakage of oil is the conversion of ordinary tin into the allotropic form, gray tin powder. This change to gray tin powder is known to take place at a maximum rate at —48° C. and may take place more slowly at other temperatures below 18° C. Should this change occur along the soldered seams of the container, the mysterious leakage of oil might well be explained. This peculiar disintegration of tin is also shown by certain alloys of tin. Articles of pewter (tin 4 parts, lead one part) have frequently been known to show such changes and this change has indeed been given the name "museum disease," referring to pewter articles. Farup[2] claims that the admixture of other metals influences the rate at which said change occurs and in the series zinc, cadmium, copper, silver, lead, the accelerating influence increases in the order given, lead having the greatest accelerating effect. Since hard solder may contain 65 per cent. tin and since pewter is known to show this property, it may also be expected in such a hard solder. If such is the case, it is a good indication of the extreme care which must be exercised to meet the severe and unusual conditions surrounding polar exploration.

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2 *Cf.* "Handbuch d. Anorganische Chemie," Abegg, III_2, pp. 550.

CUBIST SCIENCE

THOSE stanch defenders of the citadel of pure science, who have so long arrayed themselves against the insidious invasion of metaphysics, must now arm themselves to repel a new foe. This is nothing less than that *dernier cri* of esthetic literature—cubism! Those who have come in contact with the cubist literature of Gertrude Stein or her disciples and imitators will recognize at once the diagnostic symptoms of infection in an article by P. C. van der Wolk in one of the most sober journals of genetics.[1] This paper is entitled "New Researches into Some Statistics of *Coffea*." Note the apparent innocence of the title. Here are some excerpts:

> In both of the former communications we saw how that generally the different curves, *within* the definite end curve, are present in a greater or smaller number of removings; the tops of the different curves remove in all directions, whereby the crucial point is still that the place of those tops is not so arbitrary. . . . I thought in the beginning to have an instance in which all the curves exhibited precisely the same top as was the case with the first four curves. Suddenly however halfway up the tree, the top thrust out a large distance to the right side, and to my astonishment the consequent curves as well as the definite end curve exhibited exactly the same top as curve 5. It is noteworthy that this top-removing happened *suddenly, without transition*. . . . Let us now refer back to both of the previous investigations. We then once more observe all those analyzed curves. Is there then a difference in principle between this newly recorded case and all the others? Is there a difference in principle in the question whether it is *only once* that a top-removing of the curves occurs within the end curve (as in our present case) or that *several times* top-removing takes place (as is the case in the two previous communications). Certainly not. [Italics are the author's.]

The scientific world will await with renewed interest this author's fourth communication, which we understand is to be a statistical study of top-removing in *Cannabis indica*.

J. F. A.

MOTIONS OF ATMOSPHERE

TO THE EDITOR OF SCIENCE: Recent letters from mathematicians and physicists seem to show that there are very few students or professors in our universities who pay much attention to the difficult problems that refer to motions of the atmosphere on a large scale. But surely there must be some physicists who

1 *Zeitschrift für Induktive Abstammungs- und Vererbungslehre*, 1914, XI., p. 355 ff.