plasm free from signs of degeneration. When such a suspension is incubated at 37° C for two or three hours, the cells, instead of disintegrating, continue to appear normal. When placed in a drop of chicken plasma, according to the established method, and kept at 37° C for a few hours, the cells are seen to migrate out actively toward the periphery of the culture media.

If the suspension is deprived of its power to produce sarcoma by heating or by treatment with alcohol, smears no longer show the normal-looking cells. The cells after these treatments assume the morphological appearance of death, showing marked pycnosis, karyorrhexix, etc. It was also noted that desiccated mouse or rat tumor cells are completely necrotic when suspended in salt solution and examined microscopically.

The above facts, repeatedly observed in a large series of experiments, may be regarded as proving that the desiccated cells of the Rous sarcoma No. 1 are not dead but are capable of revival.

The process of glycerination was also believed to be fatal to the cells of the chicken sarcoma, as it is to mammalian tumor cells. In repeated experiments I have found that this process is inadequate to rule out the viability of sarcoma cells. Briefly, these experiments were carried out as follows:

An emulsion of fresh sarcoma cells, strained through a fine wire mesh and ground fine in a mortar, was placed in 50 per cent. glycerin and kept in the ice box for one week. Cells were then washed in normal salt solution and examined microscopically. The majority of the cells had an entirely normal appearance, and their nuclei were impermeable to trypan blue. In the plasma media these cells showed the phenomenon of migration characteristic of the living cells.

These observations open up the question as to the existence of the so-called causative agent in avian sarcomas. It will be remembered that three methods have been used to demonstrate the existence of the agent which is separable from sarcoma cells, namely, filtration, desiccation and glycerination. It has been taken for granted that these processes either completely eliminated or killed the cells, leaving the causative agent viable. Judging from the fact that mammalian neoplasms have been occasionally transmitted by the Berkefeld filtrates, it is doubtful if the filtrability alone can be accepted as conclusive evidence. If desiccation or glycerination does not kill the sarcoma cells, as my experiments indicate, the question of the causative agent, separable from the cells, would seem to require a careful reconsideration. However, it is not my purpose here to discuss the existence or nonexistence of the hypothetical agent. Suffice it to say that the remarkable viability of the sarcoma cells demonstrated in the above experiments should be of significance in the study of the transmissibility and etiology of avian new growths.

Fuller accounts of experiments referred to in this note are due to appear in the March, 1926, issue of *Gann*, Vol. XX, No. 1, the journal of the Japanese Society for Cancer Research.

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THE MAGNETIC PROPERTIES OF ATOMS

IN view of the great interest attaching to recent work by Gerlach and Stern[1] on the deflection of a beam of atomic rays in a powerful inhomogenous magnetic field it seemed desirable to repeat some of this work by way of confirmation and to extend the work to other elements and molecules if possible. A Du Bois electromagnet capable of giving a normal field strength of 20,000 gauss was fitted with a wedge-shaped pole piece near which a value for $\frac{dH}{dS}$ of about $2\times10^5 \frac{\text{gauss}}{\text{cm}}$ was obtained. No difficulty was experienced in confirming the results on silver. The atomic rays of silver were obtained by heating a silver-plated tungsten filament. This method was found to be much superior to the pot furnace used by Gerlach and Stern since the latter gives off such quantities of gas that a vacuum is difficult to obtain.

In order to produce a beam of atoms of the alkali metals, the metal was introduced by a combined process of distillation and filtration, gas free, into a bulb connected with the apparatus. Heat was applied to the bulb externally from an electric furnace. It was found that a deposit of sodium or potassium could be obtained on a glass plate at room temperature but in order to obtain a sharp image it was necessary to construct the apparatus so that the liquid air could be applied to the outside of the receiving plate. The alkali metal images could not be "developed" as were the silver images but they may be fixed so that they can be photographed by introducing hydrogen chloride gas into the apparatus.

With a beam of comparatively wide cross section (0.2 mm) a noticeable broadening of the image was obtained but no splitting. When the width of the slits producing the beam was reduced to 0.03 mm and the slits carefully adjusted with respect to the pole pieces distinct images of the divided beam were obtained for sodium and potassium. Under the microscope accurate measurements of the splitting can be made. The calculated magnetic moment is within 10 per cent. of the value of the Bohr magneton. The deflections for sodium and potassium are inversely as

[1] *Z. Physik.*, 8: 110 (1921) et. seq.

the temperature of the vapor in agreement with the kinetic theory.

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THE REGULAR SPRING MEETING OF THE EXECUTIVE COMMITTEE OF THE COUNCIL

THE executive committee of the council of the association met at the Cosmos Club in Washington on Sunday, April 25, with the chairman, Dr. J. McK. Cattell, in the chair and all members present excepting Dr. F. R. Moulton, who was unable to come. Three sessions were held, one in the forenoon, a second in the afternoon and a third in the evening. The committee dined together at 6:30 in the small tea-room in the Cameron House of the club. The following items of business were transacted:

(1) The committee expressed its hearty appreciation of the excellent services being performed for the association by the executive assistant, Mr. Sam Woodley, especially in connection with the task of preparing the manuscripts for the recently published directory of members.

(2) Certain features of the organization of the Washington office were discussed and the permanent secretary was asked to study the possibilities of such changes as may render the organization more efficient, reporting the results of the study to the committee at its next meeting.

(3) One hundred and twenty-seven members were elected to fellowship, on nominations regularly approved by the section secretaries. These newly elected fellows are distributed among the several sections as follows:

Section A	4	Section K	1
Section C	7	Section M	12
Section E	3	Section N	4
Section F	86	Section O	5
Section G	5	Total	127

(4) It was voted that the formation of a new division of the association to include Nebraska, Oklahoma and Kansas, as well as Colorado and Wyoming, is not feasible.

(5) A special committee was established to make inquiry and submit further suggestions on the problem of the formation of a new division to include Colorado and Wyoming. This committee is to consist of Dr. H. B. Ward (chairman), Dr. Aven Nelson and a third person to be named by these two.

(6) Proposals to form sections on home economics and on cosmology were considered and it was voted that neither of these proposals is feasible at present. The scientific aspects of these subjects are represented in the present arrangement of sections and it seems generally undesirable to attempt to form new sections that would simply divide the field of science in a different way from that followed by the constitution. It was suggested that such borderline and overlapping fields might well be specially cultivated in the programs of the meetings, by means of joint sessions of two or more sections, the subjects for such joint meetings being stated so as to show the interrelations of the several branches of science thus brought together.

(7) Official affiliation with the association was ratified for the American Oil Chemists' Society and the American Veterinary Medical Association. Each of these organizations is to have one representative in the council of the association.

(8) Official affiliation, according to the special arrangement for affiliated academies of science, was ratified for the Alabama Academy of Science and the Pennsylvania Academy of Science.

(9) In connection with the general aim of the association to aid in the popular dissemination of scientific knowledge, a proposal was considered by which a non-technical scientific weekly publication might be organized under the auspices of Science Service (in the control of which the association takes part) with a special subscription price to members of the association. A committee was appointed, with power, to consider and decide upon this proposal, the association to take no financial responsibility. The committee consists of: Dr. J. McK. Cattell (chairman), Dr. W. J. Humphreys, Dr. Vernon Kellogg, Dr. B. E. Livingston and Dr. Edwin B. Wilson.

(10) The executive committee considered again the proposal for a non-technical illustrated monthly magazine under the control of the association, but no action seemed warranted as yet.

(11) A special committee (Dr. W. J. Humphreys, chairman, Dr. J. McK. Cattell and Dr. H. B. Ward) was appointed to consider the possibility of strengthening the appeal of SCIENCE, both on the scientific and on the popular side.

(12) Dr. M. I. Pupin was nominated to Science Service as the representative of the American Association to succeed Dr. W. W. Campbell.

(13) A committee on exhibition was established, with Dr. H. E. Howe as chairman, to have charge of the exhibition at the annual meetings. This committee is to consist of two representatives of the exhibitors, two representatives of the men of science, one representative of the city of the meeting, and, in addition, as *ex-officio* members, the president, the permanent secretary and the manager of the exhibition.