about six months, the bazaar ghee is usually seldom stable for more than a fortnight. Apart from the question of vitamin A, rancid ghee has no market value and therefore in an agricultural country like India preservation of ghee for sufficiently long periods of time is economically important.

Milk fat, like all other fats, does not absorb oxygen as soon as it comes in contact with it but passes through an induction period. At lower temperatures this period is considerably longer. Presence of moisture is detrimental as it hydrolyses lecithin to trimethylamine, which, in turn, produces a fishy odour. A measure of the length of the induction period will furnish a valuable index of the keeping quality and freshness of a ghee sample.

Acidity is another important factor determining rancidity. Sweet cream butter may be stored for long periods with very little change in flavours.[29] Cold storage of milk fat is advantageous in that it prevents the development of acidity, but it also prevents the destruction of lipase due to low acid concentration. Lipase liberates the lower and volatile fatty acids which are responsible for 'off' flavours. Thus, butter preserved in the cold gets rancid in a comparatively short time when raised to room temperature.

Inert gases have been extensively adopted for the purpose of preserving fats. Carbon dioxide (15 per cent.) retards the onset of rancidity in beef fat stored at 0°C.[30] However, according to some authors,[31] carbon dioxide cannot be considered as an inert gas for dairy products containing milk fat since the increased acidity hydrolyses the glycerides into fatty acids.

In connection with the development of rancidity in ghee it may be mentioned that enzymic action plays very little part as these are destroyed during its preparation. Some workers do not attach much importance to bacterial action as well. Jensen and Grettie[32] have reviewed the general question of the action of micro-organisms on fats. It is not unlikely, that micro-organisms play an important role since it has been mentioned by several investigators that the development of moulds has an adverse effect on the stability of milk fat.[33] Rancidity can be caused by 'Ps. fluorescens'.[34] This conclusion is further supported by the fact that the storage of ghee in unclean vessels leads to its spoilage. The beneficial action of zinc is noteworthy in this connection.

Milk fat contains higher alcohols like sterols and lipoids like lecithin. A study of the effect of these constituents on the stability of ghee and vitamin A may lead to very interesting results.

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[29] Rogers, *Proc. Third. Internat. Cong. Refrigeration*, 1913, **2**, 667.

[30] Lea, *J. Soc. Chem. Ind.*, 1933, **52**, 9T.

[31] Holm, Wright and Greenbank, *J. Dairy Sci.*, 1927, 10, 33.

[32] Jensen and Grettie, *Oil and Soap*, 1933, **10**, 23.

[33] Bevis, *J. Soc. Chem. Ind.*, 1933, **42**, 417T.

[34] Derby and Hammer, *Iowa Agr. Expt. Station Research Bull.*, 1931, No. 145.

RESEARCH NOTES.

MATHEMATICAL AND PHYSICAL.

Determination of Dirichlet's Series Satisfying a Functional Equation.—Hecke (*Math. Annalen*, 112 Band, V Heft, pp. 664—699) has solved a very general problem (the particular case of the Riemannian Zeta-function being determined from its functional equation had been solved earlier by Hamburger), concerning the determination of functions satisfying a functional equation analogous to that of the Riemannian Zeta-function and some regularity conditions. Let λ, k, be +ve constants and $r = \pm 1$. Let $\phi(s)$ be such that $(s-k)\,\phi(s)$ is an integral function of finite order; and $\left(\frac{2\pi}{\lambda}\right)^{-s} \Gamma(s)\,\phi(s) = \mathrm{R}(s) = r\mathrm{R}(k-s)$; and let $\phi(s)$ be expansible as a Dirichlet series of the special form $\Sigma \frac{a_n}{n^s}$ which is convergent for some value of s. Each of such functions $\phi(s)$ is said to belong to the signature $\{\lambda, k, r\}$. The problem he has handled is the determination of the number of linearly independent ϕ's. To each such function ϕ, another function $f(\tau)$ is made to correspond. $f(\tau)$ is defined in the following manner. Let $\mathrm{F}(x) = \sum_1^\infty a_n e^{\frac{-2\pi n x}{\lambda}}$

Then by means of Mellin's integral it is also $= \frac{1}{2\pi i}\int \frac{\mathrm{R}(s)}{x^s}\,ds$ where the integral is taken along the line $\mathrm{R}(s) = \sigma_1$, $\{\phi(s)$ converges absolutely for $s = \sigma_1\}$; and $\mathrm{C}_k = \left(\frac{2\pi}{\lambda}\right)^{-k} \Gamma(k)\alpha$, where

α = the residue of $\phi(s)$ at k. Then $f(\tau) = r\mathrm{C}_k + \mathrm{F}(-i\tau)$ where $x = -i\tau$. The conditions which are satisfied by $\phi(s)$ give rise to corresponding conditions which should be satisfied by $f(\tau)$. The conditions (regularity conditions are omitted) are

$$(1)\ f(\tau+\lambda) = f(\tau) \qquad (2)\ \frac{f\left(-\frac{1}{\tau}\right)}{(-i\tau)^k} = r f(\tau).$$

[The equations are analogous to those satisfied by elliptic modular transcendentals for $\lambda = 1$.] He has shown in a natural way that the problem for ϕ is identical with that of f. The results that he obtains do not assume the acquaintance of the general theory of automorphic functions; he only uses simple theorems on conformal representation. The results he obtains are the following:

I. when $\lambda > 2$, there exists an ∞ of linearly independent ϕ.

II. when $\lambda = 2$, the number of linearly independent $\phi = \left[\frac{k}{4}\right] + 1$, for $r = 1$, and

$= \left[\frac{k-2}{4}\right] + 1$ for $r = -1$. [for $k < 2$ no such ϕ exists.]

The case when $0 < \lambda < 2$ is very interesting

[If G (λ) is the group formed out of the substitutions $U(\tau) = \tau + \lambda$. $V(\tau) = -\frac{1}{\tau}$, the fundamental region of the group is conjectured by Hecke to lie inside the region $|T| \geqslant 1$, $-\lambda/2 \leqslant R(T) \leqslant \lambda/2$. When $\lambda > 2$ the fundamental region is connected. [This is the reason for the diversity of the results when $\lambda \geqslant 2$, when $\lambda < 2$.] In this case, ϕ exists only when $\lambda = 2\cos\frac{\pi}{q}$, $k = \frac{4A}{q-2} + 1 - r$, where q and A are positive integers [$q \geqslant 3$], in that case the number of linearly independent $\phi \leqslant \left[\frac{A + \frac{r-1}{2}}{q}\right] + 1$, and in case ϕ is regular at $s = k$, the number is equal to $\left[\frac{A + \frac{r-1}{2}}{q}\right]$. Therefore in case $0 < \lambda < 1$ there do not exist any ϕ at all. In ease $\lambda = 1$, then $q = 3$ and G (λ) is the modular-group. ϕ only exists when k is even and $r = (-1)^{k/2}$. The number is then $\left[\frac{k}{12}\right]$ when $k = 2$ [mod 12], $= 1 + \left[\frac{k}{12}\right]$ otherwise.

He has also considered the Zeta-functions of various algebraic fields and L-functions, and their determination by means of the preceding analysis. By means of an interesting artifice, he has proved a finiteness theorem in case $\lambda > 2$ by introducing a series of functions $\phi_\varepsilon(s)$, and considering a Matrix equation in $R\alpha(s)$ instead of the functional equation for R (s). In the case of the quadratic field $k[\sqrt{D}]$, $\{D > 0\}$, some specially formed Zeta-functions satisfy equations of the preceding type. K. V. I.

Conservation of Energy and Momentum in Individual Processes.—The accepted theory of the Compton effect is based on the law of conservation of energy and momentum in individual encounters between a quantum and an electron. The experiments of Bothe and Geiger have shown that the law is true as far as the scattering of X-rays by electrons is concerned. It was therefore a great surprise when Shankland,[1] using high energy γ-rays failed to observe more than chance coincidences between the kicks of two counters one of which detected the recoil electrons and the other recorded the scattered γ-ray photons. The attention of physicists was more strongly drawn to this result because Dirac[2] expressed the favour of the view of Bohr, Slater and Kramers that the laws of conservation of energy and momentum were only statistically true and did not hold in the case of individual processes. Although Dirac sought in this way to do away with a number of difficulties in the theory of Radiation, the belief in the conservation laws could not be so easily shattered. The question whether the scattered photons were instantaneously ejected or not was decided by Piccard and Stahel[3] by making γ-rays fall on a quickly rotating sector of Al, Fe, or Pb kept before two compensated ionisation chambers which could indicate an excess of photons or electrons. They found that to the order of accuracy of 10^{-7} sec. the ejection of the recoil electron and that of the scattered photon were simultaneous. Now Jacobsen[4] in Copenhagen and Bothe and Maier-Leibnitz[5] in Göttingen, have repeated Shankland's experiment under more precisely known conditions. Thus, whereas Shankland used the inhomogeneous γ-rays from Radium, the other investigators used the more homogeneous radiation from a Thorium preparation and found more coincidences than chance could account for.

Jacobsen allowed the γ-rays from a source of 10 mg. of Radio-Thorium, filtered by 0·5 cm. of lead, to pass through a hole $1 \times 1{\cdot}5$ cm.^{2} in a lead block of 30 cm. thickness. The γ-rays were then scattered by a paraffin screen. The β-ray and γ-ray counters were both kept at 30° to the direction of incidence. The results are summarised in the following table. Chance coincidences were found out by having a lead sheet of 2 mm. thickness before the β-ray counter.

Jacobsen concluded that the increase in the number of coincidences due to the presence of the scatterer was of the expected order when the laws of conservation were assumed to hold in single encounters and due allowance was made for the inhomogeneity of the primary radiation, scattering within the paraffin and so on.

Bothe and Maier-Leibnitz used Radio-Thorium equivalent to 20 mg. of Radium and employed a cellophane sheet of 0·028 grm./cm.^{2} as the opinion that this experiment seemed to be in the scatterer. The β-ray and γ-ray counters were set at 30° to the incident rays and were of aluminium with a wall thickness of 0·08 mm. and an effective surface of 12×20 mm.^{2} They were placed at a distance of 45 mm. from the scatterer. The table below gives the results obtained by them.

Expt. No.	Kicks per minute				Coincidences per hour		
	Without scatterer		With scatterer		Total without Pb sheet	Chance with Pb plate	Difference
	β-counter	γ-counter	β-counter	γ-counter			
I	120	28	195	29	6·5 ± 0·6	2·3 ± 0·3	4·2
II	120	120	195	121	11·7 ± 0·9	8·6 ± 0·7	3·1

[1] *Phys. Rev.*, 1936, **49**, 8.
[2] *Nature*, 1936, **137**, 298.
[3] *Naturwiss.*, 1936, **24**, 413.
[4] *Nature*, 1936, **138**, 25.
[5] Göttinger, *Nachr.*, 1936, **2**, 127.

Expt. No.	Kicks per minute			Coincidences in 14·5 hours			Chance coincidences per 1,000 Electrons
	Electron counter		Photon counter	With scatterer	Without scatterer	Excess	
	With scatterer	Without scatterer					
I	85	45	41	25	5	20 ± 5·5	0·6
II	140	88	86	95	34	61 ± 11	1·4

Since the observed excess of coincidences is enormously larger than the expected increase of chance coincidences, the authors conclude that their experiment fully confirms the photon theory of the Compton effect. Bohr,[6] after considering these results, says that there is no longer any reason to doubt the validity of the laws of conservation of energy and momentum in individual processes and the successes of the neutrino theory point in the same direction. The difficulties of quantum electrodynamics have to be removed by a more penetrating analysis, taking into account the atomic nature of electricity as pointed out by Bohr.

T. S. S.

Sonic Activation in Chemical Systems Oxidations at Audible Frequencies.—It is well known that ultrasonic radiations can induce or accelerate many chemical reactions. Flosdorf, Chambers and Malisoff (*J. Am. Chem. Soc.*, 1936, **58**, 1069) have carried out some experiments which demonstrate for the first time, the possibility of such effects being brought about by even audible frequencies. It is found that water and aqueous solutions of sodium bisulphate and sodium chloride can be oxidised by dissolved oxygen, on irradiation by sonic frequencies of about 9,000 cycles per second. The oxidations appear to be accomplished through the production of activated oxygen in association with cavitation.

K. S. G. D.

Durability of Moulding Sands.—In a recent publication (*University of Illinois Bulletin* 281) Casberg and Schubert have briefly described the procedure adopted in carrying out the tests by the 3 methods employed, *viz.*, the mould test, oven test and Hydration and Dehydration methods. They have set out in detail the result obtained by them using two natural sands, *viz.*, Albany and Mulberry grove sands and two synthetic sands obtained by mixing Ohio clay and bentonite clay to silica sand. The results disclose rather a wide difference in the durability amongst natural sands but they show how by addition of bentonite, the life may be increased. They have, from the experiments, concluded that it would be more economical to add clay after using sand for some heats and that durability depends on physical and chemical properties of the minerals found in the bonding substances.

This pamphlet will be very useful to those engaged in foundry and research work since in addition to the authors setting out the results of their tests they have also added a Bibliography of recent American publications on the subject.

E. K. R.

Nepheline Contrasts.—During the discussion of his paper on nepheline at the International Geological Congress in South Africa, Dr. Morozowicz maintained that whatever the rock in which it was found, nepheline had a constant chemical composition. In order to show that the composition depends upon the magma from which it crystallised, Bowen collected a series of samples from South Africa and made a detailed study (*American Mineralogist*, **21**, No. 6) of the optical and chemical properties of this mineral. The specimens were collected from two distinct areas—one in a series of soda-rich rocks and the other in a potash series of rocks. In the soda rich rocks the mineral is rich in both nepheline and albite molecules, thereby showing that the mineral is highly siliceous. On the other hand, in the potash series of rocks the mineral nepheline is rich in kaliophilite, and the albite molecule is reduced to one per cent. In the optical properties there is a slight difference in refractive index,—those formed from magmas poor in K_2O having a lower refractive index than those formed from magmas of high K_2O content which is in conformity with the conclusions of Bannister and Hey. Further, with the help of an equilibrium diagram, Bowen has shown that the variation in the composition of the magma is a main factor responsible for the variations noticed in the character of the nepheline.

The Solubility of Quartz.—That deficiency in silica during lateritisation is due to solution of quartz during the earlier phases of this process has been established by the work on the Malabar laterites recently conducted in Lacroix's laboratory in Paris. But the corrosion and etching so frequently noticed in quartz pebbles constituting the conglomerates and quartzites have been assigned to various other causes, such as the different solvents present in underground water. Recently in a note published, Dr. Fox (*Geol. Sur. of India Rec.*, **69**, Pt. 4) has examined such surface features on quartz pebbles from different localities in India, and he opines that in certain cases they are due to animal agency. It is interesting to note that he has actually detected certain tiny larvæ-like creatures in some of these holes in quartz pebbles which are as small as 1/32 of an inch. From this he suspects that the solvent action of either the saliva or other secretions of such animals is probably responsible for such a surface corrosion.

[6] *Nature*, 1936, **138**, 25.

BIOLOGICAL.

Seedling Method as a Means of Determining the Requirements of a Soil for Fertilisers.—The claims of a method somewhat similar to the Neubauer and Schneider method of testing soils are brought out in a study by L. L. Golodkovsky and reported in the *Bulletin of Soviet Union Scientific Research Cotton Institute, Sejusnihi*. 1935. 6. The experiment subdivides the seedlings into three groups according to the weight and size of the seeds used, *e.g.*, 10 seeds > ·4 gr.: 10 seeds > ·03 and < ·4 gr.; and 10 seeds < ·03 gr. The size and weight of the seeds was found to be inversely proportional to the response of the seedlings to plant nutrients. but the smallest seeds gave plants which were too weak to stand the conditions of the experiment: the middle size group was therefore found most suitable and these showed the best response to N and P_2O_5. The 30 plants tested at the seedling stage showed a difference in their requirement of plant nutrients according to supplementary nutrients stored in the seed (albumins and carbohydrates). The seed pans contain 200 gr. of soil and each pan grows 20 seedlings which are harvested 20–25 days after germination. Among the plants tested rice and tomatoes were found to be highly responsive, the rice to nitrogen and the tomatoes to phosphates. The data furnished by this method were found to agree closely with those arrived at by field or pot experiments, and the method of using rice seedlings for nitrogen and tomato seedlings for phosphate requirements of soils is recommended for working out the fertiliser requirements of different classes of soils in practice. The apparent simplicity and quickness of the method make it worthy of being tested for soils in this country also.

A. K. Y.

Can Arrowed Sugarcane be used as Planting Material?—The suitability of cane setts cut from arrowed canes as compared with those from young cane is the subject of a study reported in the *Phillipine Agriculturist*, **25**, No. 1. Seed setts from arrowed canes were pieces cut with nodes bearing side shoots actively growing; these were trimmed to diminish transpiration and used for planting; setts from young cane were those from six months old cane cut into pieces each containing two to four or more buds. The results showed that in regard to germination both kinds came up well, the cut setts giving a 7·5 per cent. better germination in December planting and the arrowed setts giving a 36.4 per cent. better germination in the February planting. This difference was also reflected in the stand of the cane in the two different seasons. As regards yields of cane the arrowed setts gave a significantly higher yield than the cut setts in the February planting while in the December planting the yields showed no difference between each other. On the whole it may be said that arrowed cane setts were found quite as suitable as cut setts. while on the other hand in the February planting they were found decidedly superior in germination. stand of cane and yields of cane and sugar. These conclusions are of much value because there are times when cane arrows profusely and it then becomes impossible to obtain planting material in the usual way, that is from young or unarrowed cane.

A. K. Y.

Lanital—A New Artificial Fibre, being a Substitute for Wool.—In the wake of the artificial fibres rayon and staple fibre intended and used largely as artificial silk and cotton comes the production of artificial wool, a still another attempt by the great nations to avoid their dependence on outside supplies of raw material for their important manufacturing industries. This time it is Italy and the inventor is M. Antonio Ferretti. The raw material used for the purpose is casein, the composition of which so closely resembles that of natural wool that this circumstance led the inventor to the possibility of manufacturing it into the form of a wool substitute. Casein is treated to obtain a solution somewhat like "viscose" which is then passed through twisters with very fine holes, then through a coagulating bath, and later cut into the desired length to obtain a "flock". The external appearance is said to be like first rate merino wool thoroughly washed and carded. In other essential properties also such as elasticity, consistency, the taking of dyes, resistance to the action of water and of caustic alkalies, etc., it is said to compare very well with natural wool; it is warm, soft and non-conducting; it is said to be superior in its smoothness and unshrinkability, though inferior in respect of its felting capacity. Prof. Georges Ray (*Bul. Internat. Inst. Agric.*, April 1936) deals with the possible reactions of this invention both in Italy and elsewhere on the dairy industry in particular and the sheep and cattle raising industries in general.

A. K. Y.

Development of the Embryo Sac in *Gagea* (Liliaceae.)—Romanov (*Planta*, June 1936, Bd. 25, Heft 3), has just published the results of a very thorough investigation on the embryology of three species of *Gagea*, *viz.*, *G. ova*, *G. tenera* and *G. graminifolia*. The results are very interesting, for this genus also now shows the occurrence of the type of embryo sac discovered by Bambacioni (1928) in *Fritillaria persica*. Briefly, the 4 megaspore nuclei formed after reduction are not separated by walls and three of them pass to the chalazal end of the sac. In the third division the metaphasic spindles of these nuclei fuse together so that a second 4-nucleate stage results, in which the 2 micropylar nuclei are haploid, while the chalazal two are triploid. The fourth division occurs in only three of these nuclei; the fourth and lowest usually remains undivided and degenerates. The mature embryo sac thus has 7 nuclei of which 3 form the egg apparatus, one is the upper polar, one is the lower polar ($3n$), and 2 form the antipodals (also $3n$). It is concluded that the type of development shown to occur in *Gagea* indicates that its proper place lies in the group *Tulipeæ* (where a similar embryo sac is known to occur in some other genera) and not in the *Allieæ*.

On p. 453 the author suggests that this type of modification of the embryo sac may henceforth be called the "*Fritillaria*-modification" and the name "*Lilium*-type" be abandoned since it does not exist in *Lilium*. For this should be

substituted the name "*Adoxa*-type", since this was the first genus reported to have an eight-nucleate embryo sac arising from the megaspore mother cell by only three nuclear divisions. An exactly similar opinion has been expressed elsewhere by the present writer.

Maheshwari, P., "Review of D. C. Cooper", *Jour. Ind. Bot. Soc.*, June 1936.

P. MAHESHWARI.

"Fish-Pearls" from the Andamans.—A paper of unusual interest has recently been published in the *Proceedings of the National Institute of Sciences of India* (1936, **2**, No. 2, 93–100) in which Dr. H. Srinivasa Rao records the occurrence of pearl-like concretions (Calculi) found in the stomach of cartilaginous and bony fishes from the Andaman sea and gives a fairly detailed account of their physical and chemical properties. The author gives a resumé of the earlier records of "pearls" found in animals other than molluscs, such as fish, crustaceans, etc. and discusses the formation of chitin in the external and internal structures of various animals, in which "pearls" have been found. He concludes that "the chitinous 'pearls' from the Andamans may have been formed in the gall-bladder or in the connective tissue of the liver of the predatory fish or its prey".

Chimpanzee Births in Captivity.—We have no detailed chronological account of the procœstrous gestation and parturition phases of the sexual life of the Anthropoids and the paper by J. H. Elder and R. M. Yerkes (*Proc. Roy. Soc. Lond.*, (B), 1936, **819**, 409) considerably fills the large gap in our knowledge of the development of the apes. The authors describe that out of the 15 pregnancies only one chimpanzee happened to give birth to a twin. Impregnation occurs at about the "mid-point of 35-day sexual cycle". Conception ends menstruation and the average duration of gestation is 236 days. The mother is observed to be very docile both during pregnancy and after parturition.

The Spermatogenesis of *Ichthyophis Glutinosus*.—The history of the germ cells of no member of the Apoda is known and B. R. Seshachar in a recent paper (*Zeitschrift. Zell. u. mikr. Anat.*, June 1936, Bd. **24**, H. 5, 662) has described the spermatogonia of *Ichthyophis glutinosus*. The testes of the animal are in the form of a varying number of distinct lobes connected together by a longitudinal collecting duct. Each lobe is made up of a number of locules filled with a fatty matrix in which the cells undergoing spermatogenesis are seen scattered in groups. The primary spermatogonia are large cells occupying the mouth of the duct as well as the periphery of the locule. The nucleus, at first spherical, becomes gradually polymorphic as metabolic activities are initiated in the cell. The mitochondria exhibit a characteristic grouping around the archoplasmic area in the form of a concentric ring. The Golgi bodies invest the archoplasmic area, and are in the form of crescentic batonettes. There are 42 chromosomes. The secondary spermatogonia are smaller and occur in groups along the periphery of the locule.

SCIENCE NOTES.

Professor Lidio Cipriani of the Anthropological Institute of the Royal University of Florence left Italy alone in September 1934 on his seventh scientific expedition. He visited Ceylon and South India and concentrated particularly on the peoples of Coorg, Cochin and Travancore. He left India in June 1935 and returned to Italy by car through Baluchistan, Persia, Iraq, Syria, Turkey, etc. Some of his anthropometrical data for a few Coorg communities have now appeared (*Archivo per l'Antropologia e la Etnologia*, **65**, fasc. 1–4, 87–124, 19 figs.). There is a brief discussion of the importance of Coorg anthropologically, and the national dress is described. Maximum, minimum and mean data for height and for three somatic indices are given in one table for 846 individuals in nine different castes and tribes including those for 119 Todas. The samples are rather small for all but "True Coorg" males (287), and the figures for Kadir, Kanikkar and Urali are scarcely statistically significant. The other tables deal with the data for Coorgs, Kurubas and Yeravas only, and two separate communities of each of the latter are treated together. Skin colour shows marked differentiation between the Coorgs and the far darker low-caste people. Interesting graphs show the distribution of stature, skeletal cephalic, facial and nasal indices for males and females of these three castes. The Coorgs are strikingly taller, more brachycephalic and leptorhine. This study avoids the common tendency anthropologists have to concentrate on the rarer Hill Tribes to the neglect of the higher communities on the West Coast. Many Western students are under the impression that this region is inhabited almost entirely by short, dolichocephalic tribes. These data show that the Coorgs are quite tall and definitely brachycephalic with maxima at 79, 81 and 83 for males. Other tables show the correlations between stature, cephalic index and nasal index. The table in which the author compares his results with those of Holland published thirty-five years ago is illuminating because it demonstrates the reliability of the cephalic index and the unreliability of the nasal index for comparative purposes when different workers are involved. There are some excellent photographs.

On this same expedition Professor Cipriani measured 2323 persons, including 737 females. The data were obtained from thirty-seven different castes and tribes; fifty or more of one sex were measured only in the case of Brahmins, true Coorgs, Lingayats, Kombattis, Kurubas, Todas and Yeravas. He was assisted in this work by Dewan Bahadur L. K. Ananthakrishna Iyer, the veteran Anthropologist of India. Prof. Cipriani is now engaged in writing a book on India.

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Royal Asiatic Society of Bengal.—At a meeting of the Royal Asiatic Society, held on 3rd August, Prof. J. N. Mukherjee exhibited a brass utensil pierced by hailstones.

"On the 24th Falgun, 1312 B. S. (8th March