Spargo himself, and many and possibly most of whom are doing all that can be done with the authority and money that the people have put at their command. What these men need, if they are to do efficient work, is more public sympathy and support, and more authority and more money wherewith to exercise it, and the publication of such statements as those quoted above will not help them to get any of these things.

With the author's working program no fault can be found: "Healthy herds, efficient inspection, insistence upon cleanliness and careful handling of the milk, municipal farms for providing public institutions, infants' milk depots for the sale of properly modified and pasteurized milk for babies, education of the mothers and the girls before they reach wifehood and motherhood." Too little consideration is given to the cost of producing and marketing milk, for after all it is reasonable to believe that milkmen will be found ready to provide just as good a product as the market demands, providing only that the market is reasonably steady and the market price yields a fare profit. The stress laid on the availability of the goat as a source of milk is unusual. The proper sphere of this animal seems to be, however, as a source of one family supply, so that the consumer can be in entire command of the situation and the milk, taken from the goat under ideal conditions, pass promptly from the udder of the animal to the stomach of the child. But with the prevalence of apartment house life, and with the backyard of the dwelling contracted almost to the vanishing point, there are serious difficulties in the way of introducing goats into the domestic establishment. As a competitor to the cow in the production of the general milk supply the goat does not need to be seriously considered.

The author has followed the common practise of adopting infant mortality as an index to the character of the milk supply. No death rate, however, for infants under one year of age, or for children over one and under five, is of material value unless calculated on the basis of the population of corresponding age, and too commonly no such basis is available. No general death rate for infants is of value as an index to the efficiency of milk control, since it is based in part on the deaths of infants due to difficult labor, premature delivery and other causes to which the character of the milk supply is in no way related, and is influenced by variations in the numbers of deaths from these causes. And while the death rate from diarrhœal diseases among children under one or under two years of age possibly forms the best basis for estimating the results of the improvement of the milk supply, the number of deaths from such diseases is so influenced by atmospheric temperature and humidity that a full and accurate knowledge of such conditions is necessary when interpreting such death rates unless the figures relate to periods of time of such considerable duration as to reduce to a minimum the effect of these factors.

It is to be hoped that when another edition of this book is published a more convenient system of references to authors consulted will be adopted. A less diffuse style and possibly the concentration of attention on fewer subjects would probably render the book of more interest and value to the general reader. The fact that a layman should write a book on the milk question for lay readers and that a publisher should expect to find a sale for it is a hopeful sign of the times and augurs well for the early solution of the problem, for people themselves will eventually have to settle all questions concerning it, either through commercial readjustments or through force of law, or probably through both, and the mere official can do only what the people authorize and empower him to do.

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Scientific Journals and Articles

The June number (volume 14, number 9) of the *Bulletin of the American Mathematical Society* contains the following papers: Report

of the April meeting of the society, by F. N. Cole; report of the April meeting of the Chicago Section, by H. E. Slaught; In Memoriam Heinrich Maschke; "Criteria for the Irreducibility of a Reciprocal Equation," by L. E. Dickson; "A New Graphical Method for Quaternions," by J. B. Shaw; "Logic and the Continuum," by E. B. Wilson; Shorter Notices (Picard's "Développement de l'Analyse and La Science moderne," by E. B. Wilson; Mathew's "Algebraic Equations," by F. Cajori; Bertini's "Geometria Proiettiva degli Iperspazi," by C. H. Sisam; Staude's "Analytische Geometrie des Punktes, der geraden Linie und der Ebene," by G. N. Bauer; Shepard's "Strength of Materials," by E. W. Ponzer; Hering's "200-jähriges Jubiläum der Dampfmaschine," by F. Cajori); Notes; New Publications.

THE July number of the *Bulletin* (concluding volume 14) contains: "The Inverse of Meusnier's Theorem," by Edward Kasner; "On the Distance from a Point to a Surface," by Paul Saurel; "On the Solution of Algebraic Equations in Infinite Series," by P. A. Lambert; "The Deduction of the Electrostatic Equations by the Calculus of Variations," by A. C. Lunn; "The Fourth International Congress of Mathematicians," by C. L. E. Moore; Shorter Notices ("Encyklopädie der Elementar-Mathematik," Bande 2–3, by H. S. White; Lebesgue's "Leçons sur l'Intégration et la Recherche des Fonctions Primitives," by D. R. Curtiss); Notes; New Publications; Seventeenth Annual List of Papers read before the Society and subsequently published; Index of Volume.

AT the sitting of the Paris Academy of Sciences on June 22, according to a report, M. Poincaré read a note from M. Jean Becquerel on the nature of positive electricity and the existence of positive electrons which have been found in a Crookes tube. Dr. Salmon, of the Pasteur Institute, announced that sleeping sickness had been cured in monkeys by means of a form of atoxyl. MM. Beorges and Gustave Laudet gave particulars of their success in photographing sounds. Those photographs are so clear that they permit of a study of sound far more precise than any hitherto known. The most delicate peculiarities of the voice, such as lisping, and even breathing, are produced with the greatest distinctness. The MM. Laudet, who have been pursuing those inquiries since 1905, when they first communicated their ideas to the Academy of Sciences, have been induced to give the present account of their success owing to the recent communication on the same subject by M. Devaux Charbonnel. The MM. Laudet, instead of having recourse to electricity, like M. Devaux Charbonnel, have employed a purely mechanical and direct means for securing the desired record.

SPECIAL ARTICLES

OBSERVATIONS ON CHANGE OF SEX IN CARICA PAPAYA

WHILE change of sex among the phanerogams is not unknown yet it is of such rare occurrence that any well-demonstrated instances as those shown by the Caricas under observation are worthy of careful study. This is especially true when that change can be brought about by cultural methods as seems to be clearly proved in the present instance.

Carica papaya is a tropical, rapidly growing tree-like form belonging to the Passifloreæ family. As found in Porto Rico it is distinctively diœcious, the monœcious form being very rare except when produced as were the ones under observation. The tree is non-branching, but will readily develop lateral buds if the terminal bud is destroyed.

The staminate trees bear the flowers in dense, dichotomously branched head-like groups on a very long helicoid dichotomous branched peduncle. The flowers in each group on the peduncle develop successively, continuing over a long period of time, so that there is no time during the year when flowers are not shedding pollen. The pistillate tree bears axillary flowers of a very different form from the staminate. The pistillate flowers are born in an unbranched peduncle and vary in number from one to five or even more; usually three. Of these only one, with rare exceptions, sets fruit. It is said that the flowers