planner for re-touching. The rôle of the economist in national planning is not underestimated, but what is claimed by geography is that the geographer can certainly help the economist to keep his feet on the earth. To materialize a scheme of national planning in India, which is the home of one-fifth of the population of the world and where cultivable land per head of population is less than that of other agricultural countries, the starting of an all-India organization for conducting the Geographical Survey of the country, more or less, on the lines of the existing Geological Survey, will be a distinct step forward.

CENTENARIES

Poisson, Simeon Denis (1781–1840)

SIMEON DENIS POISSON, a French mathematician, was born at Pithiviers in the district of Loiret, June 21, 1781. He has recorded an interesting anecdote about his infancy: The infant was put out to nurse. One day his father went to visit his baby. Finding that the nurse had gone to the fields he impatiently broke into the cottage and there saw, with painful astonishment, his darling suspended by a small cord to a nail fixed in the wall to prevent his being injured by the animals in the house. Poisson added, "A gymnastic effort carried me incessantly from one side of the vertical to the other; and it was thus, in my tenderest infancy, that I made by prelude to those studies on the pendulum that were to occupy so much of my maturer age."

After elementary education, he was sent to learn surgery from an uncle of his. "Once my uncle sent me", he says, "to put a blister on the arm of a child; the next day when I presented myself to remove the apparatus, I found the child dead; this event, very common they say, made the most profound impression on me; and I declared at once that I would never be either physician or surgeon. Nothing could shake my resolution, and they sent me back to Pithiviers." There he happened to chance upon a copy of the *Journal de l'Ecole Polytechnique* received by his father and began to solve, unaided, the problems proposed there. This discovered his mathematical propensity. He joined the Polytechnic School at Paris in 1798. His professors discovered his genius and exempted him from the drudgery of the curriculum. This released his energy for creative work and in 1800, he published two memoirs, one on Bezout's method of elimination, the other on the number of integrals of an equation of finite differences. At the instance of Legendre, the latter was published in the *Recueil des savants etrangers.*

This brought him immediately to the notice of Lagrange and Laplace. After the completion of his course, he was appointed repetiteur of his school. In 1802 he was made additional professor and succeeded Fourier as professor in 1806. The following are the posts he held thereafter: astronomer to the Bureau of Longitudes (1808); professor of mechanics (1809); member of the Institute (1812); councillor of the university (1820); and geometer to the Bureau of Longitudes in succession to Laplace (1827). In spite of the stormy days in which he lived he was left undisturbed in his academic career. That is because, Napoleon was wise enough to see that nothing was to be gained by persecuting the harmless academician whose fame he doubtless regarded like that of the other savants of France as an appanage to his own glory. What a contrast to what obtains to-day under the urge of racial and communal hatred!

Poisson's outstanding contribution to pure mathematics is the series of memoirs on definite integrals. His discussion of the Fourier's series paved the way for the classical researches of Dirichlet and Riemann. His memoirs on the calculus of variation and the theory of probability are also worth mentioning. His range in applied mathematics was very wide; electricity and magnetism, heat, gases, capillary attraction and gravitation. In planetory theory he carried forward Lagrange's work on the stability of orbits to the second degree of approximation. Lagrange thought so highly of this memoir that he made a copy of it with his own hand in spite of his old age (1809). What is more significant, it stimulated old Lagrange to write one of the greatest of his memoirs on the same subject. Poisson's well-known correction of Laplace's differential equation for the potential came out in 1813.

On the whole, Poisson wrote about 300 papers in addition to the five treatises most of which were intended to form part of a great work on mathematical physics, which he did not live to complete.

Poisson died, April 25, 1840.

S. R. RANGANATHAN,