

also instituted State Geological Surveys, and have produced excellent maps and descriptive memoirs, besides amassing valuable collections of the minerals, rocks and fossils of their respective domains. The central government organised various surveys of the western territories, which did admirable work of a pioneering and prospective kind under such leaders as J. D. Powell (1834-1902), J. S. Newberry (1822-1892), Clarence King (1842-1898) and F. V. Hayden (1829-1887). When it was found in 1879 that some of these explorations were traversing the same ground, a consolidation of the whole geological effort was made, and the Geological Survey of the United States was established. The magnitude and excellence of the work already accomplished by this organisation place it in the forefront of all national geological enterprises.