

by the initial inhibition of growth by the colchicine, thus permitting the accumulation of metabolic reserves in the meristems, which, released by the disappearance or reduction in effective concentration of the colchicine by the cessation of treatment resulting in a belated but greatly increased rate of growth, is not known.

All the plants which responded by increased growth to colchicine applications were those treated with four to seven applications of the 0.4 per cent. solution.

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TOADS IN THE MARIANAS

ON October 23, 1944, the junior author took advantage of a brief shore leave to explore the ruins of the town of Tenian on the Island of Tinian. He observed large numbers of toads and tadpoles in cisterns and numerous lily ponds of the former Japanese settlement. No exact counts were made, but a rough estimate of at least 12 adult toads in each of over 100 cisterns plus at least twice that number for the lily ponds yields a population of close to 4,000 adult toads at that time. Because the junior author was not certain that this was a species of toad desired by the senior author, he collected only 4 animals, two of each sex. On the voyage back to the United States one male was lost; it jumped overboard. The remaining three animals were utilized for several purposes, after their safe arrival. Blood smears were made and the intestines were used for the study of the intestinal fauna; testes and potential ovaries (Bidder's organs) of the surviving male were fixed for cytological study.

It appeared that the toads were typical specimens of *Bufo marinus* Linnaeus, an assumption which was confirmed by Arthur Loveridge, of the Museum of Comparative Zoology. One female is incorporated in the collection of the Museum of Comparative Zoology, while the other female and the male are deposited in the Museum of Vertebrate Zoology at the University of California under the numbers 40856 and 40857.

No records have been found of the occurrence of toads in the Mariana Islands; and while the introduction of *Bufo marinus* into the Hawaiian, Solomon and Fiji Islands was known, the newest record would add to the list of introductions. The observation of such large numbers even after the shelling of the town would indicate that the introduction resulted in a successful establishing of the species.

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BOTANISTS SOMETIMES IMPORTANT MILITARY TACTICIANS

MANY people look upon the average botanist as a rather theoretical and prosaic individual, whose talents are best spent in the quiet fields back of the lines rather than in the field of tactics of an active war front. This may be generally true, but one great English botanist, John Ball,^{1,2} by his detailed knowledge of geographical botany in the Alps, pointed the way to victory for the Italian army fighting against Austria in 1866. Garibaldi was at that time feeding the Italian soldiers to the Austrian gunners in the Austrian fort of Val Ampola, near Lago di Ledro. John Ball, thoroughly familiar with the Alps from his long botanical studies and explorations of this region, gave the Italian War Office such valuable information that it soon led to the capture of this fort. For this timely advice the Italian staff decorated him.

John Ball was a most remarkable personality, as well as a distinguished botanist of the old school. He was a keen scientific philosopher, and an observant and discriminating naturalist, as his "Notes of a Naturalist in South America," published in 1887, attest. The style and interest of this work makes it a classic in its sphere.

It is of interest that Ball organized the Palliser Expedition to discover the best route across the Rocky Mountains of British America, and of the 4 passes first surveyed one, Kicking Horse, was used by the Canadian Pacific Railway.

It falls to the lot of few botanists to be as versatile and to become as distinguished in so many fields as John Ball. In spite of his varied accomplishments he complained that his fondness for society prevented his giving much time to scientific work.

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THE "U. S. BOTANICAL GARDEN" AGAIN

IN 1934 the director of the so-called U. S. Botanical Garden retired. Then the Honorable Kent Keller, Congressman from Illinois, chairman of the House Library Committee (which with the Senate Library Committee had jurisdiction over the institution), realizing the sad condition of the place and its worse reputation, strove to raise its standards. He sent questionnaires to every known botanical garden of the world, and sent Professor F. A. Varrelman, then at the American University in Washington, to Europe to inspect, photograph and gather information from

¹ Obituary by Sir Joseph D. Hooker. 16 pages. 1890. A reprint from the *Jour. Roy. Geog. Soc.*

² John Ball, F.R.S., by W. T. Thistlethorn Dyer. *The Jour. of Bot.*, 27: 365-370. 1889.