**Cotoneaster rosiflorus** (Rosaceae), a new species from Taiwan

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**ABSTRACT.** *Cotoneaster rosiflorus* K. C. Chang & F. Y. Lu, a new species of Rosaceae subfam. Spiraeoideae, tribe Pyreae (formerly subfamily Maloideae) from Taiwan is described. A taxonomic treatment, line drawings, color photographs and pollen SEM micrographs are provided to illustrate the species. A somatic chromosome number of \(2n = 68\) is reported for the first time for *C. rosiflorus*. *Cotoneaster rosiflorus* occurs mainly at 2,500-3,500 m altitude in central Taiwan. It resembles *C. morrisonensis* vegetatively, but is distinct by the erect to slightly spreading pink petals, pink or reddish filaments, 3-5 styles, and 3-5 pyrenes.

**Keywords:** *Cotoneaster horizontalis; Cotoneaster morrisonensis; Cotoneaster rosiflorus; Maloideae; New species; Rosaceae; Spiraeoideae; Taiwan.*

**INTRODUCTION**

*Cotoneaster* (Rosaceae) is a genus of about 90 species widespread in temperate Asia (except Japan), Europe and North Africa (Yü and Lu, 1974; Lu and Brach, 2003), although other authors consider the number of species 260 (Mabberley, 2008) or closer to 400 (Fryer and Hylmö, 2009). In 1911 Hayata described from Taiwan three species of *Cotoneaster*, namely *C. formosana* Hayata, *C. koidzumi* Hayata and *C. taiouensis* Hayata, all of which were synonymized under *Pyracantha koidzumi* (Hayata) Rehd (Ohashi, 1993). Subsequently, Hayata, (1913, 1915) published three species, *C. konishii* Hayata, *C. morrisonensis* Hayata and *C. rokudaisanensis* Hayata, in ‘Icones Plantarum Formosanarum.’ Masamune (1932) treated *C. rokudaisanensis* as a synonym of *C. morrisonensis*, and Hayata (1933) treated *C. rokudaisanensis* as a synonym of *C. morrisonensis*, which was followed by Kanchira (1936), Li (1963), Liu and Su (1977) and Ohashi (1993). Only two species of *Cotoneaster*, *C. konishii* and *C. morrisonensis*, were recognized in the second edition of *Flora of Taiwan* (Ohashi, 1993). Hsieh and Huang (1997), in their revision of the genus *Cotoneaster* in Taiwan, considered *C. morrisonensis* and *C. rokudaisanensis* distinct, and added a neglected species, *C. horizontalis* Decne. In 2001 Fryer and Hylmö published a new species, *C. hualiensis* J. Fryer & B. Hylmö, from this island. Lai and Hsieh (2001, 2003) added two neglected species, *C. subadpressus* Yü and *C. apiculatus* Rehd. & Wils., to the flora of Taiwan. Lu et al. (2005) documented another new distributional record, *C. dammeri* C. K. Schneid., in Taiwan. More recently, Chang et al. (2009) clarified the taxonomic confusion involving *Photinia kudoi* Masamune and recognized *Cotoneaster bullatus* Bois for Taiwan. Fryer and Hylmö (2009) published a new species, *C. nantouensis* Fryer & Hylmö, from Taiwan. We checked the protologue and examined a type specimen image of *C. nantouensis* (E. H. Wilson 10072!, MO) and hereby consider it to be a synonym of *C. subadpressus*. In this study we report yet an additional new species, *C. rosiflorus* K. C. Chang & F. Y. Lu, which occurs at 2,500-3,500 m altitude in Central Mountain Ranges on this island. The number of recognized species of *Cotoneaster* in Taiwan has increased drastically in the recent decade, which is unusual for a woody genus on this island.

**MATERIALS AND METHODS**

**Cryo scanning electron microscopy**

Fresh leaves of *Cotoneaster rosiflorus* K. C. Chang & F. Y. Lu, *C. horizontalis* Decne and *C. morrisonensis* Hayata were dissected and attached to a stub. The samples were frozen with liquid nitrogen slush, then transferred to a sample preparation chamber at -160°C. After 5 min, when the temperature rose to -130°C, the samples were fractured. The samples were etched for 10 min at -85°C. After coating at -130°C, the samples were transferred to the