

DISTRIBUTION OF THE CHALCONE, ISOSALIPURPOSIDE, IN THE ONAGRACEAE

W. A. DEMENT

Department of Biological Sciences, Stanford University, Stanford, California, CA 94305, U.S.A.
and

P. H. RAVEN

Missouri Botanical Garden, St. Louis, MO, 63103, U.S.A.

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Key Word Index—*Oenothera*; Onagraceae; chalcone; isosalipurposide; chemotaxonomy.

Abstract—Isosalipurposide was present in 13 species and absent from 27 other species of the Onagraceae.

IN THE course of a biochemical systematic investigation of the Onagraceae the chalcone, isosalipurposide (4,2',4',6'-tetrahydroxychalcone 2'-glucoside), was isolated and identified. This is the first report of chalcones in the family.¹⁻³ The compound was present in the

TABLE 1. DISTRIBUTION OF ISOSALIPURPOSIDE IN THE ONAGRACEAE

Present	
<i>Camissonia ovata</i> (Nutt. ex Torr. & Gray) Raven	<i>Oe. grandis</i> (Britton) Smyth
<i>Gaura mutabilis</i> Cav.	<i>Oe. maysillesii</i> Munz
<i>Ludwigia maritima</i> Harper	<i>Oe. rhombipetala</i> Nutt. ex Torr. & Gray
<i>L. peruviana</i> (L.) Hara	<i>Oe. seifrizii</i> Munz
<i>Oenothera drummondii</i> Hook.	<i>Oe. speciosa</i> Nutt.
<i>Oe. elata</i> HBK.	<i>Zylagona arborea</i> (Kell.) Donn. Smith & Rose
<i>Oe. epilobiiifolia</i> HBK.	
Absent	
<i>Clarkia breweri</i> (Gray) Greene	<i>Fuchsia splendens</i> Zucc. (<i>F. cordifolia</i> Benth.)
<i>C. dudleyana</i> (Abrams) F. Macbr.	<i>F. excorticata</i> (Forst.) L.f.
<i>C. concinna</i> (Fisch. & Mey.) Greene	<i>F. microphylla</i> HBK.
<i>C. purpurea</i> (Nels. & Macbr.) Lewis & Lewis	<i>F. paniculata</i> Lindl.
<i>C. rubicunda</i> (Lindl.) Lewis & Lewis	<i>F. ravenii</i> Breedlove
<i>C. speciosa</i> Lewis & Lewis	<i>Lopezia cornuta</i> S. Wats.
<i>C. unguiculata</i> Lindl.	<i>L. gentryi</i> (Munz) Plitmann, Breedlove & Raven
<i>Epilobium angustifolium</i> L.	<i>L. longiflora</i> Decaisne
<i>E. hirsutum</i> L.	<i>L. miniata</i> Lag. ex DC.
<i>E. luteum</i> Pursh	<i>L. semeiandra</i> Plitmann, Breedlove & Raven
<i>E. mexicanum</i> Moc. & Sessé ex DC.	<i>Oenothera acaulis</i> Cav.
<i>E. obcordatum</i> Gray	<i>Oe. caespitosa</i> Nutt.
<i>E. ponticum</i> Hansskn.	<i>Oe. deserticola</i> Munz
<i>E. watsonii</i> Barbey	

Voucher specimens are being deposited in the Dudley Herbarium at Stanford University.

¹ HARBORNE, J. B., (1967) *Comparative Biochemistry of the Flavonoids*, Academic Press, New York.

² HOWARD, G. Z., MABRY, T. J. and RAVEN, P. H., (1971) *Phytochem.* 11, 289.

³ NOZZOLILLO, C. (1970) *Can. J. Bot.* 48, 1215.

flowers of 13 species from the genera *Camissonia*, *Gaura*, *Ludwigia*, *Oenothera* and *Xylomagra* but absent from *Clarkia*, *Epilobium*, *Fuchsia*, *Lopezia* and 3 species of *Oenothera* (Table 1). The flowers of the 3 *Oenothera* species lacking the chalcone were white in color while those exhibiting it were either wholly or partially yellow.

The chalcone was identified as isosalipurposide by co-chromatography (3 solvents), UV spectroscopy (MeOH, 370 nm; NaOMe, 430 nm; AlCl₃, 410 nm, AlCl₃-HCl, 405 nm; NaOAc, 340 sh, 390 nm; NaOAc-H₃BO₃, 430 nm) and acid hydrolysis yielding the flavanone, naringenin and glucose.

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