Template for Taxonomic Proposal to the ICTV Executive Committee
To create a new Family

Code[†]	**2006.029I.04**	To create a new family* in an unassigned Order°	
Code[†]	**2006.030I.04**	To name the new family*	***Iflaviridae***
Code[†]	**2006.031I.04**	To designate the following genera as part of the new family*:	
		Iflavirus	

[†] Assigned by ICTV officers
° Leave blank is not appropriate
* repeat these lines and the corresponding arguments for each genus created in the family

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Old Taxonomic Order

Order	-
Family	-
Genus	***Iflavirus***
Type Species	***Infectious flacherie virus***
Species in the Genus	***Infectious flacherie virus*** ***Perina nuda virus*** ***Sacbrood virus***
Unassigned isolate in the Genus	**None**
Unassigned Species in the family	-

New Taxonomic Order

Order	-
Family	***Iflaviridae***
Genus	***Iflavirus***
Type Species	***Infectious flacherie virus*** **Infectious flacherie virus (IFV)**
Species in the Genus	
	D*eformed wing virus*
	Deformed wing virus **Kakugo virus**
	Ectropis obliqua virus
	Ectropis obliqua virus (EoV) **Ectropis obliqua picorna-like virus (EoPV)**
	Perina nuda virus
	Perina nuda virus (PnV) **Perina nuda picorna-like virus (PnPV)**
	Sacbrood virus
	Sacbrood virus (SBV)
	Varroa destructor virus-1
	Varroa destructor virus-1 (VDV-1)

Argumentation to create a new family:

The genus *Iflavirus* was established as a floating genus for inclusion in the 8th ICTV Report but was not accorded family status at that time. Subsequent to the establishment of the genus (which included only three species at the time: *Infectious flacherie virus*, *Perina nuda virus* and *Sacbrood virus*), a number of new viruses have been added to the genus i.e. Deformed wing virus, Ectropis obliqua virus and Varroa destructor virus-1. These viruses all have a genome arrangement similar to the picornaviruses, marnaviruses, and sequiviruses with a monopartite positive stranded RNA genome containing a single large open reading frame that encodes the capsid proteins in the 5' region and replicases (in order of helicase, protease, and polymerase) in the 3' region with 5'-terminal VPg and 3'-terminal poly (A) tail.

Phenetic analysis using the RNA-dependent RNA polymerase region (see Annexe 1) shows that the iflaviruses form a monophyletic group distantly related to the dicistroviruses, picornaviruses, sequiviruses, comoviruses and the floating genera *Sadwavirus* and *Cheravirus*.

Despite the apparent similarity of their genomic organization to other groups i.e. the picornaviruses, marnaviruses, and sequiviruses, there is no evidence from the phenetic analysis that they are any closer to any of these groups than to any of the others and while ostensibly most similar to the picornaviruses important differences include: the smallest capsid protein (VP4) of iflaviruses being encoded in the second position of the capsid precursor coding region and a host range that is limited to invertebrates.

The above features all indicate that the iflaviruses are distinct from all other higher taxa and that they should be accorded familial status.

We therefore propose that a new family be created and termed *Iflaviridae*. The type species for the family should be designated as *Infectious flacherie virus*. At present only a single genus (*Iflavirus*) is proposed for inclusion in the family.

Origin of the proposed family name

Ifla: A sigla from the type species of the genus *Iflavirus*, *Infectious flacherie virus*

References

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2) Isawa H., Asano S., Sahara K., Iizuka T., Bando H. (1998) Analysis of genetic information of an insect picorna-like virus, infectious flacherie virus of silkworm: evidence for evolutionary relationships among insect, mammalian and plant picorna(-like) viruses. Archives of Virology 143, 127-143.

3) Ghosh R.C., Ball B.V., Willcocks M.M., Carter M.J. (1999) The nucleotide sequence of sacbrood virus of the honey bee: an insect picorna-like virus. Journal of General Virology 80, 1541-1549.

4) Wang X., Zhang J., Lu J., Yi F., Liu C., Hu Y. (2004) Sequence analysis and genomic organization of a new insect picorna-like virus, Ectropis obliqua picorna-like virus, isolated from *Ectropis obliqua*. Journal of General Virology 85, 1145-1151.

5) Wu C., Lo C., Huang C., Yu H., Wang C (2002) The complete genome sequence of *Perina nuda* picorna-like virus, an insect-infecting RNA virus with a genome organization similar to that of the mammalian picornaviruses. Virology 294, 312-323.

6) Ongus J.R., Peters D., Bonmatin J. M., Bengsch E., Vlak J.M., van Oers M.M. (2004) Complete sequence of a picorna-like virus of the genus *Iflavirus* replicating in the mite *Varroa destructor*. Journal of General Virology 85, 3747-3755.

7) Fujiyuki T., Takeuchi H., Ono M., Ohka S., Sasaki T., Nomoto A., Kubo T. (2004) Novel insect picorna-like virus identified in the brains of aggressive worker honeybees. Journal of Virology 78, 1093-1100.

Annexes:

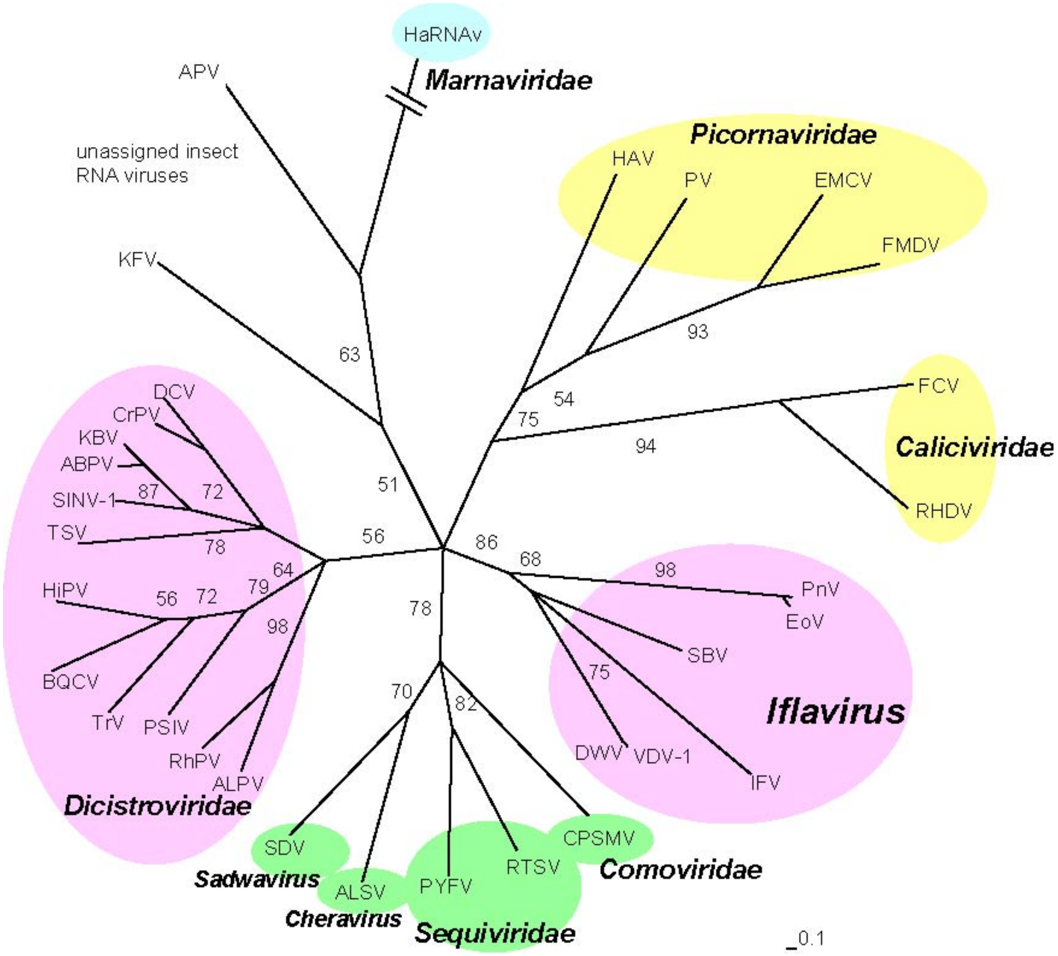

Figure 1

Unrooted phenogram derived from the RdRp domain of the viral non-structural proteins showing the relationships of viruses in the genera and families *Iflavirus*, *Cheravirus*, *Sadwavirus*, *Caliciviridae*, *Picornaviridae*, *Comoviridae*, *Sequiviridae*, *Dicistroviridae*, *Marnaviridae*, and unassigned two insect 'picorna-like' viruses APV and KFV. The branch length for HaRNAv is shortened to one-fourth because of the distance of the virus. Taxa used (with virus name (abbr.) and accession number) were: *Dicistroviridae*; Acute bee paralysis virus (ABPV) AF150629, Aphid lethal paralysis virus (ALPV) AF536531, Black queen cell virus (BQCV) AF183905, Cricket paralysis virus (CrPV) AF218039, Drosophila C virus (DCV) AF014388, Himetobi P virus (HiPV) AB017037, Kashmir bee virus (KBV) AY275710, Plautia stali intestine virus (PSIV) AB006531, Rhopalosiphum padi virus (RhPV) AF022937, Solenopsis invicta virus-1 (SINV-1) AY634314, Taura syndrome virus (TSV) AF277675, Triatoma virus (TrV) AF178440: *Iflavirus*; Deformed wing virus (DWV) AY292384, Ectropis obliqua virus (EoV) AY365064, Infectious flacherie virus (IFV) AB000906, Perina nuda virus (PnV) AF323747, Sacbrood virus (SBV) AF092924, Varroa destructor virus 1 (VDV-1) AY251269: *Sequiviridae*; Parsnip yellow fleck virus (PYFV) D14066, Rice tungro spherical virus (RTSV) M95497: *Comoviridae*; Cowpea severe mosaic virus (CPSMV) M83830: *Sadwavirus*; Satsuma dwarf virus (SDV) AB009958: *Cheravirus*; Apple latent spherical virus (ALSV) AB030940: *Picornaviridae*; Poliovirus (PV) V01149, Foot-and-mouth disease virus (FMDV) X00871, Encephalomyocarditis virus (EMCV) M81861, Hepatitis A virus (HAV) M14707: *Caliciviridae*; Rabbit hemorrhagic disease virus (RHDV) M67473, Feline calicivirus (FCV) M86379: *Marnaviridae*; Heterosigma akashiwo RNA virus (HaRNAv) AY337486: unassigned insect RNA viruses; Kelp fly virus (KFV) DQ112227, Acyrthosiphon pisum virus (APV) AF024514.