Thirty years ago, in their classical work “Principal Diseases of Lower Vertebrates”, Reichenbach-Klinke and Elkan devoted only two paragraphs to possible viral infections of reptiles.

In the intervening period, interest in the subject has escalated and viruses have now either been isolated or identified from all orders of reptiles except the Rhynchocephalia (tuatara). The subject remains in its infancy, however, in that many of the viruses detected have not yet been investigated in detail and their relevance in terms of health and disease is unknown.

Some of the more important viruses of reptiles i.e. ones that appear to be responsible for disease, are listed below.

<table>
<thead>
<tr>
<th>Order</th>
<th>Virus/disease</th>
<th>Comments</th>
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</thead>
<tbody>
<tr>
<td>Chelonia</td>
<td>Green turtle</td>
<td>Causes “gray-patch disease in young green turtles <em>Chelonia mydas</em></td>
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<tr>
<td>(tortoises,...)</td>
<td>Herpesvirus</td>
<td></td>
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<tr>
<td></td>
<td>Herpesvirus-associated stomatitis</td>
<td>Reported in tortoises from North and South America and Europe</td>
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<tr>
<td></td>
<td>Herpesvirus-associated hepatic necrosis</td>
<td>Reported in at least three species of North American turtle (terrapin)</td>
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<td></td>
<td>Iridovirus infection of liver and spleen</td>
<td>One case reported in a Hermann’s tortoise <em>Testudo hermanni</em></td>
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<tr>
<td></td>
<td>Papilloma-like virus</td>
<td>Skin lesions of Bolivian side-neck turtles <em>Platemys platycephala</em></td>
</tr>
<tr>
<td>Crocodylia</td>
<td>Caimanpox</td>
<td>Skin lesions in Spectacled Caimans <em>Caiman sclerops</em> and Nile Crocodile <em>Crocodylus niloticus</em></td>
</tr>
<tr>
<td>(crocodiles,...)</td>
<td>Adenovirus infection of Nile Crocodile</td>
<td>Hepatic and intestinal lesions</td>
</tr>
<tr>
<td>Squamata</td>
<td>Poxvirus of flap-necked chameleon</td>
<td>Inclusions in monocytes of <em>Chamaeleo dilepis</em> in Tanzania</td>
</tr>
<tr>
<td>Lacerta</td>
<td>Poxvirus of tegu</td>
<td>Skin lesions in a <em>Tupinambis teguexin</em></td>
</tr>
<tr>
<td>(lizards)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Papilloma of lacertid lizards
Adenovirus infection of Jackson's chameleon
Adenovirus-associated hepatic necrosis
Erythrocyte virus infection of lizards
Venom gland
Herpesvirus infection
Herpesvirus infection of Boa Constrictors
Adenovirus-associated hepatic necrosis in a Boa Constrictor
Paramyxovirus
Inclusion body disease of boid snakes

Squamata
Ophidia (snakes)

Skin lesions in European Green Lizard *Lacerta viridis*
Respiratory and alimentary inclusion bodies in a *Chamaeleo jacksonii*
Hepatic and other inclusion bodies in at least two species
Inclusions in erythrocytes of various species
Detected in venom and/or venom gland of Asian snakes
Inclusions in liver and elsewhere of young *Constrictor constrictor*
Inclusions in liver, virus isolated
Associated with respiratory disease and death in many species of snake in Europe and North America
Associated with neurological signs in various boids including Boa Constrictor

Diagnosis of virus infections of reptiles is based upon one or more of the following:-

1. clinical signs
2. histopathology
3. electron-microscopy
4. virus isolation, using cell lines
5. transmission studies
6. serology

The veterinary surgeon who suspects a viral infection in reptiles should seek advice from colleagues who have appropriate experience and laboratory support. In the meantime, every effort should be made to contain the infection by isolating affected animals and instigating a rigorous program of hygiene and quarantine. Post-mortem material and clinical samples must be carefully stored for subsequent investigation.

Acyclovir has appeared to assist recovery in tortoises with Herpesvirus stomatitis. Vaccines against virus diseases are needed.

**REFERENCES**