Nyctanthes arbor-tristis (Oleaceae) is a mythological plant; has high medicinal values in Ayurveda. The popular medicinal use of this plant are anti-helminthic and anti-pyretic besides its use as a laxative, in rheumatism, skin ailments and as a sedative. Vitally, the natives plant it in their home gardens to pass on its medicinal usage to oncoming generations. The present review encompasses an ethnopharmacological evaluation focusing on information on the chemical constituents, pharmacological actions and toxicology in order to reveal the therapeutic potential and gaps requiring research involvement. The present review is based on searches in Scifinder®, Pubmed (National Library of Medicine) and books published on the subject during the period 1933 to 2012. Results: *Nyctanthes arbor-tristis* is most important in local and traditional medicines especially in India for treating intermittent fevers, arthritis and obstinate sciatica. Crude extracts and isolated compounds from the plant were shown to be pharmacologically active against inflammation, malaria, viral infection, leishmaniasis and as an immunostimulant. The major class of biologically active compounds are the iridoid glucosides incl., Arbortristoside A, B and C from the seeds active as anticancer, anti-leishmania, anti-inflammatory, anti-allergic, immunomodulatory and antiviral. Other molecules; calceolarioside A, 4-hydroxyhexahydrobenzofuran-7one and β-sitosterol from leaves have been reported to be active as anti-leishmanial, anticancer and anti-inflammatory, respectively. The crude extracts have been found to be safe with an LD$_{50}$ of 16 gm/kg, while the LD$_{50}$ of arbortristoside-A isolated from the seeds was found to be 0.5 g/kg. Mostly in-vitro or in some cases in-vivo models provide some evidence especially in the treatment of inflammatory conditions like arthritis, fevers related to malaria and protozoan diseases especially leishmaniasis. The only clinical study found, is for treating malaria, but with crude extract only. Further, more detailed safety data pertaining to the acute and sub-acute toxicity, cardio and immunotoxicity also needs to be generated for crude extracts or pure compounds [Agrawal, J., and Pal, A*. (Molecular Bio-prospection Department, Central Institute of Medicinal and Aromatic Plants, Council of Scientific and Industrial Research, Lucknow 226015, India), *Journal of Ethnopharmacology*, 2013, 146 (3), 645-658].

**Hepatoprotective activity of Borreria hispida on paracetamol induced liver damage**

Hepatocytes are the functional cells of the liver and perform a wide range of metabolic, secretory and endocrine functions. Hepatotoxicity implies chemical-driven liver damage. The liver plays a major role in transforming and clearing chemicals and is susceptible to the toxicity from these agents. Certain medicinal agents, when taken in overdoses and sometimes even when introduced within therapeutic ranges, may injure the organ. Other chemical agents, those used in laboratories and industries, natural chemicals and herbal remedies can also cause hepatotoxicity. *Borreria hispida* seed flavonoid-rich fraction possesses free radical scavenging and antioxidant activity both in vitro and in vivo. *Borreria hispida* Linn has been in use in the Indian system of medicine. Various part of the plant are useful in the treatment of antifertility, appetite, Bleeding in child birth, body ache, Gum trouble, scabies and skin disease, Stomach compliance, Ulcers, hepatitis, Wounds, head ache and tooth ache. The hepatotoxicity is induced by the paracetamol overdose, and the methanolic extract of Borreria hispida shows a good reduction of hepatotoxicity [Johnson, D.B*., Senthil Kumar, C., Rajesh, R., Venkatnarayanan, R. and Mohammed Ansar, V.K. (Department of Pharmacology, R.V.S. College of Pharmaceutical Sciences, Sulur,
Plants and plant based medications are the basis of many of the modern pharmaceuticals we use today for various ailments. The main objective of this study was to appraise antioxidant activity of different sequential extracts of leaves and stems of *Achyranthes aspera* by phytochemical analysis. The plant material was dried in shade, crushed and subjected to prepare different sequential and non-sequential extracts using soxhlet apparatus. Our findings revealed that both stems and leaves possess the phytochemicals like alkaloids, cardiac-glycosides, terpenoids, flavonoids, saponins, steroids, proteins and reducing sugars in different amounts. The results exhibited the presence of different phytochemicals. All these phytochemicals have potential therapeutic or physiological actions on human system, for that the leaves and stems of *A. aspera* can stand as a potential source of some vital drugs [Sharma V.*, Agarwal, A., Chaudhary, U. and Singh, M. (Department of Biosciences and Biotechnology, Banasthali University, Banasthali, 304022, Rajasthan, India), *International Journal of Pharmacy and Pharmaceutical Sciences*, 2013, 5(SUPPL.1), 317-320].

**Effects of *Bixa orellana* L. seeds on hyperlipidemia**

*Bixa orellana* L., *urucum*, or *urucu*, a native tropical tree of Central and South American rain forests is used to treat various diseases in popular medicine. In Ceará, Northeast of Brazil, the seeds of *urucum* have been used for the treatment of high lipid blood levels. The present study investigated the effects of the aqueous extract from *Bixa orellana* seeds (AEBO) in mice with hyperlipidemia induced by tyloxapol, fructose and ethanol. In hyperlipidemia induced by Triton WR1339, 400...
and 800 mg/kg AEBO reduced triglycerides (TG) serum levels at 24 h and 48 h. In the study of hypertriglyceridemia induced by fructose, AEBO in doses of 400 mg/kg and 800 mg/kg reduced TG levels by 48.2% and 48.7%, respectively. Finally, the ethanol experimental model with 400 mg/kg AEBO promoted a reduction of 33.6% of TG levels, while the 800 mg/kg concentration reduced hypertriglyceridemia in 62.2%. In conclusion, the aqueous extract of the seeds of Bixa orellana was capable of reversing the hypertriglyceridemia induced by Triton, fructose and ethanol, demonstrating a hypolipidemic effect. However, further studies are necessary to discover the precise mechanism of action [Jamile M. Ferreira, Daniel F. Sousa, Mariana B. Dantas, Said G. C. Fonseca, Dalgimar B. Menezes, Alice M. C. Martins*, Maria Goretti R. de Queiroz† (Department of Clinical and Toxicological Analyses, Federal University of Ceara, Ceara, Fortaleza, Brazil), Phytotherapy Research, 2013, 27(1), 144-147].

**NPARR 4(2), 2013-0221 Towards the use of non-psychoactive cannabinoids for prostate cancer**

The palliative effects of Cannabis sativa (marijuana), and its putative main active ingredient, Δ⁹-tetrahydrocannabinol (THC), which include appetite stimulation, attenuation of nausea and emesis associated with chemo- or radiotherapy, pain relief, mood elevation, and relief from insomnia in cancer patients, are well-known. Because of the adverse psychoactive effects of THC, numerous recent preclinical studies have been focused on investigating other non-psychoactive constituents of C. sativa, such as cannabidiol, for potential therapeutic use. In this issue of the British Journal of Pharmacology, De Petrocellis and colleagues present comprehensive evidence that plant-derived cannabinoids, especially cannabidiol, are potent inhibitors of prostate carcinoma viability in vitro. They also showed that the extract was active in vivo, either alone or when administered with drugs commonly used to treat prostate cancer (the anti-mitotic chemotherapeutic drug docetaxel [Taxotere] or the anti-androgen bicalutamide [Casodex]) and explored the potential mechanisms behind these antineoplastic effects [Pal Pacher (Section on Oxidative Stress and Tissue Injury, Laboratory of Physiologic Studies, National Institute on Alcohol Abuse and Alcoholism, National Institutes of Health, 5625 Fishers Lane, MSC-9413, room 2N-17, Rockville, MD 20852, USA), British Journal of Pharmacology, 2013, 168(1), 76-78].

**NPARR 4(2), 2013-0222 Naphthoquinone components from Alkanna tinctoria (L.) Tausch show significant antiproliferative effects on human colorectal cancer cells**

Our research to seek active compounds against human colorectal cancer from the root of Alkanna tinctoria (L.) Tausch led to the isolation of two naphthoquinones, alkannin (1) and angelylalkannin (2). The antiproliferative effects of the two compounds on human colon cancer cells HCT-116 and SW-480 were determined by the 3-(4,5-dimethylthiazol-2-yl)-5-(3-carboxymethoxyphenyl)-2-(4-sulfophenyl)-2H-tetrazolium salt (MTS) method. Cell cycle profile and cell apoptosis were determined using flow cytometry. Both of the two compounds showed significant inhibitory effects on the cancer cells. For alkannin (1) and angelylalkannin (2), the median inhibitory concentration (IC₅₀) values were 2.38 and 4.76 µm for HCT-116 cells, while for SW-480 cells they were 4.53 and 7.03 µm, respectively. The potential antiproliferative mechanisms were also explored. At concentrations between 1–10 µm, both compounds arrested the cell cycle at the G1 phase and induced cell apoptosis [Nguyen Huu Tung*, Guang-Jian Du, Chong-Zhi Wang, Chun-Su Yuan* and Yukihiro Shoyama†, (Yukihiro Shoyama, Faculty of Pharmaceutical Sciences, Nagasaki International University, 2825-7 Huis Ten Bosch, Sasebo, Nagasaki 859-3298, Japan), Phytotherapy Research, 2013, 27(1), 66-70].