

EDITORIAL

## Indian contribution in medical science — Modern medicine (Part 1)

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The modern medicine has entered India with the arrival of European traders (1600 A.D.) and their colonisation in India. ‘Ecole de Medicine de Pondicherry’ (present JIPMER, Puducherry) was established in 1823 by French Government and started teaching western medicine in Asia. Medical College, Bengal (present Medical College, Kolkata) established in 28<sup>th</sup> January 1835 was the first medical college in Asia to teach in English. Chronology has been maintained according to the birth year of the legends.

**Pandit Madhusudan Gupta** (1800-1856), an Ayurved Professor, along with Professor H.H. Goodeve, performed the first dissection of human dead body by an Indian at the Medical College, Bengal, raising above all the prejudice of the society on the day of 10<sup>th</sup> January 1836 which had opened the door to Indians to study the subjects of western medicine properly. Pandit Gupta was also accompanied by his 3 students Umacharan Sett, Dwarka Nath Gupta, Raj Kristo Dey.<sup>1</sup>

**Kadambini Ganguly** (1861-1923) was the first female practitioner of western medicine in India. She passed her Graduate of Medical College of Bengal (GMCB) degree in 1886. She also sailed to England in

1893 & passed Licentiate of the College of Physicians, Edinburg (LRCP), Licentiate of the College of Surgeons, Glasgow (LRCS), & Licentiate of the Faculty of Physicians and Surgeons, Dublin (LFPS). She practiced the medicine graciously for 37 years till she expired.<sup>2</sup>

**Anandi Gopalrao Joshi** (1865-1887) was the first Indian woman to be qualified as a doctor of western medicine. She received her MD in Obstetrics from the Women’s Medical College of Pennsylvania, USA in 1886. However after returning to India she could not practice medicine as she succumbed to death due to tuberculosis.<sup>3</sup>

**Rai Bahadur Sir Upendranath Brahmachari** (1873-1946) had crowned the feather of discovery of Urea Stibamine which is an essential drug for treatment of Kala-azar (Visceral Leishmaniasis). He worked in a small ill equipped room at Campbell Hospital (present NRS Medical College) tirelessly for 5 years to discover the drug in 1920. He had done many other scientific discoveries e.g. for malaria, haemolysis etc which are compiled in two volumes under his authorship entitled “Gleanings from my research” published by the University of Calcutta in 1940 and

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1941.<sup>4</sup> Sir Upendranath was nominated for the Nobel Prize (physiology or medicine) twice in 1929 and 1942.<sup>5</sup>

**Rai Bahadur Jaising P. Modi** (1875–1954) is the father of Indian Forensic Medicine.<sup>6,7</sup> He had written the first forensic medicine book in India “Text Book of Medical Jurisprudence & Toxicology” in 1920. He was the first HOD of Forensic medicine of KGMU, Lucknow.<sup>8</sup>

**Sir Ramnath Chopra** (1882-1973) is remembered as Father of Pharmacology in India.<sup>9,10</sup> He was the first professor of Calcutta School of Tropical Medicine<sup>1</sup> and established the first “Centre of study and research in pharmacology” in India. In Indian pharmacopeia ispaghula, rauwol, cobra venom, kurchi, psoralea etc. (indigenous substance) were included by him. The books “Indigenous Drugs of India”, “Glossary of Medicinal Plants of India” and “Poisonous Plants of India” are considered as encyclopaedia of Indian medicinal plants, written by Chopra & associates.<sup>11</sup>

**Bidhan Chandra Roy** (1882-1962) is proved to be the grand panjandrum of medicine in India.<sup>12</sup> His unique date of birth and date death 1<sup>st</sup> July has been celebrated as Doctor’s Day in India. His achievement was completion of both F.R.C.S. and M. R. C. P. Simultaneously. BMJ said he was the first medical consultant in Indian subcontinent, who towered over his contemporaries in several fields. He was so famous as a doctor that news of his visit to a city or even railway station bringing forth hordes of would-be patients.<sup>12</sup> He played an important role in the establishment of Jadavpur T.B. Hospital, Chittaranjan Seva Sadan, Chittaranjan Cancer Hospital, Kamala Nehru Memorial Hospital, Victoria Institution.<sup>13</sup> He also played a key role in formation of Indian Institute of Mental Health, Infectious Disease Hospital, and postgraduate medical college in Kolkata. He was the one who establish Indian Medical

Association in 1928<sup>14,15</sup> and the first non-official President of All India Medical Council in 1939.<sup>12</sup> He led the official formation of the Cardiological Society of India (CSI) on 4th April, 1948, before the formation of the American College of Cardiology in 1949 and many others.<sup>16</sup> As Chief Minister he reformed the modern West Bengal. He was recipient of highest civilian award of India “Bharat Ratna”.

**Yellapragada Subbarow** (1895-1948) discovered phosphocreatine and adenosine triphosphate as cellular energy sources which contributed many developments in biochemistry. Discovery of aminopterin (folic acid antagonist) used for acute leukaemia, methotrexate, derivative of aminopterin, used for many dermatology and oncology patient, Aureomycin, the first tetracycline, Diethylcarbamazine, for treatment of filariasis and Polymyxin are credited to him. Among vitamins, B12 used for pernicious anemia, niacin for pellagra, vitamin B5 and biotin are discovered by him. One of the highest followed procedures is Fiske-Subbarow method of colorimetric estimation of phosphorous in blood and urine.<sup>17</sup>

**Vasant Ramji Khanolkar** (1895-1978) deserved to be called as Father of Pathology in India. He only first described the dhoti cancers, carcinogenicity of tobacco and needle aspiration cytology for the diagnosis of neoplasms. He had huge contributions to the cancer epidemiology and its understanding, leprosy and blood groupings.<sup>18</sup> He was the recipient of Padma Bhushan in 1955.

**Subodh Mitra** (1896-1961) is the renowned gynaecologist who invented the Mitra’s operation for cervical cancer treatment, which was the number 1 cancer of women in India, till few years back. Extraperitoneal lymphadenectomy with radical vaginal hysterectomy was well appreciated throughout the whole world.<sup>19</sup> He had used the radium as radiation

therapy for treatment of cervical cancer in those early era.<sup>20</sup>

**Raman Viswanathan** (1899–1982) is considered as the Father of Chest Medicine in India.<sup>21</sup> He was the founder director of Vallabhbhai Patel Chest Institute. He first proposed tropical eosinophilia as a distinct clinical entity of bronchopulmonary diseases. His other research work covered pathogenesis of basal tuberculosis, mechanism of lung atelectasis, etiopathogenesis of bronchiectasis, mechanisms underlying the production of high altitude pulmonary oedema, epidemiology of chronic obstructive lung diseases, asthma and occupational diseases, chemotherapy of tuberculosis, etc.<sup>22</sup> He was the recipient of Padma Bhushan in 1974.

**K C Chaudhuri** (1901-1973) is considered as Father of Indian Paediatrics.<sup>23</sup> The Institute of Child Health, Calcutta, was established by Dr K C Chaudhuri in 1956. Indian Journal of Pediatrics, the first pediatrics journal of India and probably in Asia, was launched by him in 1933.<sup>24</sup>

**George Coelho (?)** first Superintendent (1928) of BJ Hospital for Children – the first children’s hospital in India, also addressed by some as Father of Indian Pediatrics.<sup>25,26</sup> He had started independent research and services in pediatrics in 1928. Under his leadership postgraduate diploma in child health (DCH) was started at BJ Hospital and Bai Jeerbai Wadia hospital for children in 1944 and at University of Bombay in 1946.<sup>25</sup>

**Biresh Chandra Guha** (1904-1962) was the man who made the biochemistry as separate subjects in India and has been remembered as Father of Biochemistry in India.<sup>27</sup> His main research work was on biosynthesis of vitamin C. He also contributed worthy research on vitamin b-complex, food and nutrition. He was one of the instrumental behind the formation of present Indian Institute of Chemical

Biology, Kolkata. The idea of Central Food Technological Research Institute, Mysore, was conceived by him.<sup>27,28</sup> In his honour Biresh Chandra Guha memorial lecture is started by Indian National Science Academy.<sup>29</sup>

**Vidya Sagar Diwan** (1909-1978) is aptly called as Father of Indian Psychiatry. Involvement of family in the psychiatric patient care was his main contribution which has revolutionized the psychiatric patient care. He had invented the camp approach in psychiatry by putting up tents in the hospital campus to provide services for more number of patients and accommodation of their families. This new approach proved to be effective in reducing the social stigma to psychiatric patients.<sup>30</sup>

**B.N. Sinha** (1910-2000) is fondly known as Father of Orthopedics in India.<sup>31,32</sup> He had pioneering work in the field of rehabilitation of physically challenged patients. He was the founder president of “Indian Orthopedic Association and recipient of Padmashree in the year 1970.<sup>31</sup>

**Air Vice Marshal Madhukar Mallanah Srinagesh** (1912-?) an illustrious luminary in the field of Aviation Medicine, is considered as Father of Aviation Medicine in India.<sup>33,34</sup> He specialised in Aviation Medicine from USA in 1957. He was key person in bringing the School of Aviation Medicine at Bangalore. Very high reputation of this institution was the result of initiative, zeal, hard work and high standard of professional ability of him.<sup>35</sup>

**Lakhumal Hiranand Hiranandani** (1917–2013) was an Indian otolaryngologist who developed many new surgical techniques which collectively known as Dr Hiranandani’s Operations. He initiated a treatment protocol for throat cancer which ultimately integrated head and neck surgeries with ENT in India. The first such department was started in B.Y.L Nair Hospital in 1972. At present this

department is known as “Dr. Hiranandani’s Department of Otolaryngology and Head & Neck surgery.<sup>36</sup> He was the recipient of Padma Bhushan in 1972.

**Sivaramakrishna Iyer Padmavati** (1917-2020), India’s first woman cardiologist, is often called by many as Goddess of Cardiology in India.<sup>37</sup> In 1954 she had established North India’s first cardiac catheterisation laboratory at the Lady Hardinge Medical College. Cardiology department at G.B. Pant hospital, Delhi was started by her in 1967. She also founded All India Heart Foundation in 1962 and National Heart Institute (NHI) in 1981.<sup>38</sup> She was the recipient of Padma Vibhushan in 1992 and Padma Bhushan in 1967.

**Jyoti Bhusan Chatterjea** (1919–1972) is known as Father of Hematology research in India.<sup>39</sup> By his work of 3 decades J.B. Chatterjea uplifted the hematology centre at Calcutta School of Tropical Medicine, to Mecca for haematology learning and advanced research. He discovered the HbE in Bengal. His studies of HbE thalassaemia diseases from clinical haematological, biochemical, biophysical and genomic aspects provided excellent new information to the medical world.<sup>40</sup> (To be continued.....)

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