

Review on Preparation and Research of Prescriptions for Snake Bites in Fujian Province

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Abstract The history of research and preparation of prescriptions for snake bites in Fujian Province was reviewed, and the process of incorporating snake doctors into the system and the gradual establishment of snake bite treatment system in Fujian were explored. The composition of several main snake bite preparations in Fujian was preliminarily compared and analyzed to provide reference for the research and development of similar new preparations at present.

Key words Fujian, Chinese herbal medicine, Snake bites, Review

1 Introduction

In Fujian Province, which was called "Min" in ancient times, snake bites have been one of the medical problems the province has had to face since ancient times. Even today, this area has the highest incidence of snake bites in China. The mountainous landscape also gives the province rich resources of Chinese herbs, including those used to treat snake bites. On this basis, a large number of simple, proved and secret recipes have been formed among the folk in Fujian, but there was no written record before the founding of New China. At the beginning of the founding of the People's Republic of China, due to the shortage of medical resources, the temporary policy of "scientific traditional Chinese medicine" was adjusted. The state began to seek help from traditional medicine resources, and encouraged the folk to donate prescriptions through the campaign of collecting prescriptions. Fujian Province was particularly short of medical resources at that time, and these measures were strongly responded by the province. Abundant traditional Chinese medicine (TCM) resources emerged in Fujian, so the medicine and treatment techniques of snake bites as local common injuries were also noticed. Later, TCM snake wound preparation coming out later has not only become the special medicine before the popularity of antivenin, but also become the substitute medicine for antivenin in recent years when antivenin is in short supply, so as to continue to protect the life safety of injured patients. Therefore, the review of the above medical history is not only to summarize the development history of snake wound prescription, but also to draw attention to TCM snake wound preparation and enhance cultural confidence in TCM.

2 Collection and arrangement of prescriptions for snake bites in Fujian Province in the 1950s

With the adjustment of TCM policies, new TCM policies have been implemented through TCM representative meetings. In such

meetings, TCM practitioners began to contribute their secret and proved recipes^[1]. In December 1954, Fujian Province held the meeting of TCM representatives. According to the local characteristics, the Health Department of Fujian Province not only collected proved recipes at the meeting of TCM representatives, but also specially organized the observation and exchange meeting of snake doctors' experience to mobilize snake doctors in the province to contribute their treatment experience and secret recipes^[2]. Subsequently, some counties and cities included the prescriptions for snake injuries in the collection of proved recipes. For instance, the first volume of *Proved Recipes of Traditional Chinese Medicine* (including snake prescriptions of doctors Yu Shenchu from Fujing, Shen Miao from Nan'an, and Huang Xiaozai from Shaowu) was compiled by Fujian Provincial People's Hospital^[3]. Later, three volumes of *Proved Recipes of Traditional Chinese Medicine* and one volume of *Miscellany of Proved Recipes* (including snake prescriptions of Shunchang and Putian), as well as *Collection of Proved Recipes of Traditional Chinese Medicine in Longyan County* (including three snake prescriptions), *Selections from Proved Recipes* (including five snake prescriptions), and *Collected Proved Recipes* (including Li Zhengxian's snake prescription)^[3] were successively published.

Since the beginning of the "medical and health technology revolution", "herbal medicine personnel" with unique skills in the folk" have been absorbed into medical units in various forms throughout Fujian, and "herbal medicine specialty" has been set up in hospitals^[4]. Fujian Provincial People's Hospital set up the Snake Bite Department, but at that time, the establishment of the Snake Bite Department was not widespread, and most of snake doctors absorbed into the hospital were arranged in the herbal department^[5]. In addition, various regions in Fujian have established medical research institutes to encourage doctors of TCM and herbal doctors to participate in the research, sorting and compilation of herbal medicine^[6]. The herbal albums published during this period include the *Folk Herbal Medicine in Fujian*^[7], *Compil-*

ation of Proved Recipes of Traditional Chinese Medicine^[3], Exchange Collection of Herbal Proved Recipes, Folk Herbal Medicine of Southern Fujian, Collection of Proved Recipes of Folk Herbal Medicine, Collection of Simple and Proved Recipes of Herbal Medicine, and Collection of Proved Recipes of Folk Special Herbal Medicine^[3]. After the experience exchange meeting of representatives of herbal doctors in Fujian Province and the second experience exchange meeting of snake doctors, each county compiled and printed the mimeographed version of *Data of Herbal Proved Recipes*^[3], which included part of herbal medicine for snake bites; some snake doctors were absorbed into hospitals, and their secret recipes were compiled.

From 1959 to 1960, the Health Department of Fujian Province successively organized the general survey of Chinese herbal resources and the general survey of wild drug sources in the whole province. The working methods in four counties of Longxi special area were summarized, and then they were promoted in the whole province^[8]. In the process of the general survey of wild drug sources, five snake prescriptions of Xiong Baolin, a snake doctor in Longxi, were discovered.

The results of the general survey of Chinese herbal resources and wild drug sources were published in 1961, namely *Common Herbal Medicine in Fujian*, *Annals of Folk Snake Medicine in Fujian*, and *Wild Medicinal Plants in Fujian*^[9]. Among them, *Annals of Folk Snake Medicine in Fujian* included 151 newly discovered herbal medicine for snake bites, and became the first album of prescriptions for snake bites. It is worth mentioning that at this time, Fujian Province had been able to "transform some herbs (prescriptions) into tablets, pills and tinctures for mass production"^[10], which laid the foundation for the emergence of TCM preparations for snake bites.

3 Advances in the research of prescriptions for snake bites after the 1960s

3.1 Inheriting experience, establishing a snake bite department and popularizing prescriptions In 1958, Huang Shoulin, a snake doctor from Longyan, was employed by Fujian Provincial People's Hospital. The hospital sent Zhao Jingcheng to learn from his treatment experience and set up the Snake Bite Department. Fujian College of Traditional Chinese Medicine sent staff to sort out Huang's experience. During this period, Huang Shoulin presented the ancestral snake prescription, namely the original prescription of "Fujian snake medicine"^[11]. In the early 1960s, Fujian Provincial People's Hospital adopted the same method to recruit Lin Bingzhong, a snake doctor from Fuzhou. Lin's experience in treating snake bites was inherited by Huang Chengzhi from Jianou County People's Hospital, and Chen Jiaque, a student of Fujian College of Traditional Chinese Medicine, was responsible for sorting out it^[12]. The outpatient department of the Fuzhou Institute of Traditional Chinese Medicine also recruited Zheng Yuanchang, a TCM doctor who offered several types of herbal medicine

for snake bites. In 1960, Quanzhou People's Hospital organized doctors of Western medicine to learn from doctors of TCM, and sent a physician named Cai Hongen to learn from Fu Ruoqian, an old doctor of TCM from Quanzhou. Sun Wenfa from Fujian College of Traditional Chinese Medicine sorted out Fu's experience. By the 1970s, all city- and county-level hospitals in Fujian had basically set up snake bite departments, which were composed of specialized snake doctors (or TCM doctors who were good at treating snake bites) and Chinese and Western doctors who learned from them, and they were also guided by doctors of TCM department sent by Fujian Provincial People's Hospital^[12]. During this period, snake doctors in Fujian began to be included in the formal medical order.

In the first five years of the 1960s, hospitals and research institutes in Fujian compiled a series of Chinese herbal medicine albums. With the exception of Li Liguan's *Collection of Simple and Proved Recipes of Chinese Herbal Medicine*^[3], these albums are often named after local herbs, have TCM characteristics, and contain prescriptions for snake bites. For example, four collections of *Materia Medica in Quanzhou* compiled by Fu Ruoqian and Zeng Canghai from Quanzhou^[12], *Materia Medica in Jinjiang Special Area* compiled by Jinjiang Herbal Medicine Training Class^[3], *Folk Practical Materia Medica in Shawu* compiled by Su Zijue from Shawu County, Nanping City^[3], *Materia Medica in Northern Fujian* compiled by Nanping Institute of Traditional Chinese Medicine^[13], *Materia Medica in Songzheng* of Nanping City^[14], *Materia Medica in Xiapu* of Ningde and *Materia Medica in Eastern Fujian* of Fuzhou^[3] popularized knowledge of Chinese herbal medicine as well as prescriptions for snake bites.

In the late 1960s, due to the lack of medical resources in rural areas, the central government required all regions to make full use of rural Chinese herbal medicine resources to meet their medical needs, such as continuing to encourage the masses to donate prescriptions, mobilizing the masses to collect and plant Chinese herbal medicine, compiling albums of Chinese herbal medicine, and launching medical personnel, medical researchers and mass campaigns to study prescriptions, and it eventually developed into the "Chinese Herbal Medicine Movement"^[15]. During this Movement, health units at all levels in Fujian published a large number of Chinese herbal medicine manuals, compilations and selections, and continued to publish and popularize prescriptions for snake bites.

In addition to compiling albums of Chinese herbal medicine including prescriptions for snake bites, Fujian has also published special compilations of herbal medicine for snake bites and collections of snake doctors' experience, such as *Compilation of Folk Herbs for the Treatment of Snake Bites* (the first series) in 1963^[16] and *Huang Shulin's Experience in the Treatment of Snake Bites* in 1965^[17]. In the *Prevention and Cure of Snake Bites* published during this movement, the prescriptions for snake bites and their usage were attached to the back^[18].

3.2 Study on prescriptions for snake bites during the "Chinese Herbal Medicine Movement" During this movement, there was another upsurge of offering prescriptions in Fujian, mainly in northern, central and southern Fujian. Meanwhile, as the movement mobilized cooperation among medical and health institutions across the province, the snake prescriptions offered by the folk were further studied by medical research institutes and medical institutions at all levels, and the content included prescription selection, dosage form reform, etc.

In 1970, Zhang Fangmei, a snake doctor of Zhenghe County Hospital of Nanping City, donated her simple, proved and secret recipe "Diayouzi", and the clinical trial effect was good. It was submitted to the Science and Technology Commission of Fujian Province, and renamed "Zheng No. 1 snake medicine" by the Science and Technology Commission of Fujian Province and the Health Department of Fujian Province according to the word "Zheng" of Zhenghe County. It was included in the key scientific research project of Fujian Province, and was systematically studied by Zhenghe County Hospital and Jianyang Medical Science Research Institute. Through the clinical verification of 13 medical units in 8 counties and cities of Jianyang area, the prescription is effective. Besides, Lian Guimei, a snake doctor in Pucheng County, donated a snake prescription mainly composed of herb *Serissa japonica* (Thunb.) Thunb. Guan Fabing, a snake doctor in Guangze County, contributed a snake prescription composed of 12 kinds of Chinese herbal medicine such as "flying centipede". Chen Jiguan from Nanping City donated a snake prescription mainly composed of *Hemerocallis citrina* Baroni, and was also studied by Jianyang Medical Science Research Institute^[19]. In Huangbai Township, Zherong County, Ningde City, Changpuyang Village, called "snake doctor village", was found, and a snake doctor Wei Aqi participated in the provincial exchange meeting of snake doctors' experience near the village in 1956, and gave the secret recipe at the meeting, playing a role model for 150 snake doctors in Changpuyang Village. The research pomp of Zherong County Hospital and Ningde Medical Research Institute can be seen^[2].

In 1973, Zhu Shufu, a doctor of traditional Chinese medicine who was good at treating snake bites, was appointed as the deputy president of Jianning County Hospital in Sanming City to lead the research on snake bites. In the same year, the county hospital set up the Snake Bite Department, and a study group on snake bites was formed from internal medicine, surgery, traditional Chinese medicine, laboratory tests and pharmaceutical products. The group was led by doctor Rao Dashan, who was proficient in traditional Chinese medicine, western medicine and herbal medicine. From 1973 to 1975, after clinical observation in the hospital, it was found that Huang Shulin's snake prescription had poor effect on the bite of five-step snake (long-nosed pit viper). Thereupon under the guidance of Liu Guangfen and Hong Shanxiang of Pharmacology Laboratory of Fujian Medical College, the prescription was improved through a lot of screening and testing, and Wuyishan

snake medicine was finally made^[20].

Fu Ruoqian of Quanzhou People's Hospital had given his snake prescription and snake medicine wine, which caused the attention of the president Lin Jinchang. In the early 1970s, Quanzhou People's Hospital set up a study group on snake bites. The study group conducted clinical trials and comparisons between Fu's snake prescription and other prescriptions for snake bites, and finally made Quanzhou snake medicine based on Fu's snake prescription^[21]. Fu's snake medicine wine used clinically was later selected as the intangible cultural heritage of Quanzhou, and was included together with Quanzhou snake medicine in the *Selected Scientific and Technical Data of Fujian Province* (1966 – 1975)^[22].

3.3 Reform of dosage form of prescriptions for snake bites

The period from the 1970s to 1980s was the key period for the reform of dosage form of prescriptions for snake bites. After the slogan of "Santu and Sizi" was put forward in the "Chinese Herbal Medicine Movement"^[17], various places began to reform the dosage form of "folk recipes", and Fujian Province was no exception. In the 1950s, the snake prescription of Huang Shulin of Fujian People's Hospital was made into tablets by Fujian Institute of Traditional Chinese Medicine, Fujian College of Traditional Chinese Medicine, Fujian Medical College, Fuzhou Army General Hospital and other units through pharmacochemical analysis, pharmacological experiments and clinical trials. They were produced by Fujian Pharmaceutical Factory and named Sheshang Jiedu tablets. The tablets are a broad-spectrum snake medicine, and their detoxification effect was improved after further improvement of the formula. They were renamed "Fujian snake medicine" and once sold overseas^[23]. Quanzhou People's Hospital made Quanzhou snake medicine into tablets and granules respectively, and carried out clinical verification from 1977 to 1984^[24]. It was proved that the tablets and granules could cure most venomous snake bites except for pit viper, and had the best effect on viper, bamboo leaf green, cobra and silver ring snake and certain effect on golden ring snake and sea snake^[25]. In Quanzhou, the bite of viper is the most common^[26–27]. Quanzhou People's Hospital has conducted clinical trials on viper poisoning in the process of developing Quanzhou snake medicine^[28], so the snake medicine has strong regional applicability.

In addition to the tablets and granules for snake bites, infusion, powder, liquor and other dosage forms also appeared in this period. With the help of Pharmacology Teaching and Research Department of Fujian Medical University, the Snake Bite Department of Jianning County Hospital developed the first injection for snake bites in the province, namely Wuyishan snake medicine injection, and developed powder. Subsequently, Sanming region organized Wuyishan snake medicine clinical trial collaboration group, and mobilized a total of 27 health institutions at all levels in Sanming region for clinical verification. Verification results showed that Wuyishan snake medicine (using both powder and in-

jection) had an effect on the bites of venomous snake, cobra, tortoise shell snake, bamboo leaf green snake, *etc.*, but had a relatively weak effect on the bite of five-step snake^[29–30]. Afterwards, the Health Department of Fujian Province held an appraisal meeting of Wuyishan snake medicine in Fuzhou, and it was pointed out that Wuyishan snake medicine powder was better, but the injection needed to be improved. An improved version of the injection was introduced in August 1975 and was named "758 snake medicine"^[29]. In 1976, the exchange meeting of experience on the prevention and control of snake bites in Fujian Province was held in Guangze County, and "758 snake medicine" was listed as a medical and health science and technology project of Fujian Province^[12]. "Zheng No. 1 snake medicine" developed by the preparation room of Zhenghe County Hospital was improved into liquor and powder after filtration and purification, and verified by Fujian Institute of Drug Control. At the end of 1982, a clinical trial collaboration group was established, and it was widely used in Jianyang area. In August 1983, Fujian Provincial Department and Science and Technology Commission held an appraisal meeting in Zhenghe County, and officially named the improved preparation "Xiongshan snake medicine"^[31]. It has been clinically verified that Xiongshan snake medicine is a broad-spectrum antivenomous drug with anti-toxicity, anti-inflammatory and detumescence, relieving constipation and relieving pain, *etc.*^[32–33].

4 Application of TCM preparations for snake bites

4.1 First aid, treatment and nursing system integrating Chinese and Western medicine During the process of using prescriptions for snake bites to cure snake bites, some researchers in Fujian Province found that snake bites were difficult to heal due to tissue hydrolysis of snake venom. From 1976 to 1986, Jianning County Hospital of Sanming City carried out a study on "the antivenom effect of chelating agents", and tried to use disodium edelate injection to inactivate local snake venom in the early stage of snake bites. At that time, it was the first time in China that disodium edelate injection was injected into five-step snake bites. At the same time, under the guidance of Zhao Jingcheng from Fujian Provincial People's Hospital, the Snake Bite Department of Jianning County Hospital established the standardized diagnosis and treatment scheme for the rescue of severe patients suffering five-step snake bites by using traditional Chinese medicine preparations for snake bites and chemical preparations, and used the on-site first aid technology using the elastic splint belt designed by Rao Dashan^[2]. According to the *Prevention and Treatment of Venomous Snakes and Snake Bites in Fujian* published in 1978, disodium edelate injection has become an essential drug for the clinical treatment of snake bites in the province since 1978, and the elastic splint belt has also become an essential medical instrument for on-site first aid of snake bites^[34].

In the late 1970s, refined anti-pit viper, anti-five-step snake, anti-silver snake and anti-cobra venom serum had been de-

veloped in China^[35]. At this time, Fujian began to introduce anti-venom and popularize it from by the "provincial-city-county" health system. Meanwhile, Fujian Provincial People's Hospital sent professional staff to guide the use of anti-venom on a tour. It should be pointed out that at the beginning of introduction, Chinese herbs and snake bite preparations were still used as the main treatment methods from Fujian Provincial People's Hospital to county hospitals, while anti-venom was only used to treat critical cases^[36]. The anti-venoms introduced firstly included refined anti-five-step snake and anti-pit viper venom serum^[37]. After being equipped with these two kinds of serum, Jianning County Hospital reformulated serum preparations that could be used for infusion respectively, which won the Fujian Science and Technology Progress Award and Provincial Medicine and Health Science and Technology Achievement Award in 1986^[2]. In addition, Rao Dashan also summarized the general nursing, limb nursing, critical patient nursing and post-nursing techniques of snake bites integrating traditional and Western medicine in Jianning County Hospital, forming a relatively complete system of first aid, treatment and nursing for venomous snake bites^[38].

4.2 Wuyishan Institute for Prevention and Control of Snake Bites and grassroots prevention and control system of snake bites

In order to cooperate with the prevention work snake bites in Fujian Province, the snake bite departments of hospitals in all counties have opened the prevention and treatment courses of snake bites, but the number of the courses still cannot catch up with the needs of grassroots treatment. Therefore, Zhang Zhen, a snake doctor of Jianyang County, Nanping City, established the Wuyishan Institute of Prevention and Control of Snake Bites in Dazhulan in 1983, and then the Wuyishan Snake Medical School was established firstly in 1985. The school initially trained snake doctors in Fujian Province, and then gradually recruited students across the country to systematically teach them to use snake bite preparations, and to combine with Western medicine first-aid techniques to treat snake bites, as well as techniques of snake raising, snake catching and comprehensive utilization of snake resources. After graduation, graduate students, such as snake doctor Li Zhangxiong in Shouning County, Ningde City, returned to the town to establish the Institute for Prevention and Control of Snake Bites. By the end of the 1980s, such institute had been set up in every township in Fujian. In addition, Jianning County, Sanming City took the lead in establishing a "county-township-village" network for prevention and control of snake bites (namely the snake bite department of the county hospital—institutes for prevention and control of snake bites in a township—snake bite medical stations in a village). It was popularized by the snake bite department of the county hospital, and this model was soon spread throughout the province. So far, in addition to the "county-village-village" primary health care system, a grass-roots prevention and control system of snake bites has been formed in Fujian, and the snake medicine school affiliated to Wuyishan Institute of Preven-

tion and Control of Snake Bites constituted the communication center of the grass-roots snake control system below the county level.

In 1982, domestic refined anti-cobra venom passed clinical verification^[39], at which time Wuyishan Institute of Prevention and Control of Snake Bites had a small amount of reserves^[40], which was basically synchronized with the popularity of refined anti-cobra venom in Fujian's "provincial-city-county" health system, reflecting the immediacy of the update of treatment means in Wuyishan Institute of Prevention and Control of Snake Bites. At the same time, the institute was also the only primary snake control unit in Fujian Province with a reserve of antivenin serum, which other primary snake control units still used Chinese herbal medicine and snake bite preparations as traditional Chinese medicine to cure snake bites. After the introduction of antivenin, Wuyishan Snake Medical School began to popularize the superiority and access of antivenin over Chinese herbal medicine and snake bite preparations of Wuyishan Snake Medical School, which played a certain role in changing the concept of snake bite treatment and improving the cure rate of snake bites at grass-roots level.

From August 6 to 8, 1987, the Second National Academic Conference on Emergency Medicine Integrating Traditional Chinese and Western Medicine and the Second Extended Meeting of the Preparatory Group, the Establishment Conference of Emergency Medicine Professional Committee of National Association of Integrated Chinese and Western Medicine were held in Wuyishan Institute of Prevention and Control of Snake Bites. After the first meeting of the preparatory group held in Wuzhou, Guangxi from March 24 to 26, 1987 passed the *Opinions on the Establishment of the snake Bite First-aid Group of the Emergency Medicine Professional Committee*, the meeting further studied the preparatory work for the national academic conference on snake bites^[41]. It can be seen that Wuyishan Institute of Prevention and Control of Snake Bites provides a communication platform for academic exchanges on the prevention and control of snake bites inside and outside the province, and objectively facilitates the exchange and dissemination

of snake bite preparations as traditional Chinese medicine inside and outside the province.

5 Comparison of components of main snake bite preparations as traditional Chinese medicine

As shown in Table 1, in the formulations of five major snake bite preparations in Fujian, only Scutellariae Radix, Phellodendri Chinensis Cortex, Knoxiae Radix, and Angelicae Dahuricae Radix appeared in the formulations of more than one snake bite preparations. Scutellariae Radix and Phellodendri Chinensis Cortex are cold in nature and bitter in taste, and can clear heat and eliminate dampness, purge fire and detoxify. Scutellariae Radix has the effect of stopping bleeding. Knoxiae Radix is also cold in nature and bitter and hot in taste, and can treat the syndrome of internal withdrawal of water and drink. Angelicae Dahuricae Radix is warm in nature and hot in taste, and can dispel the wind and eliminate dampness, lessen a swelling and expel pus, and relieve pain. According to traditional Chinese medicine, venomous snake bites are divided into wind-toxicity syndrome, fire-toxicity syndrome and wind- and fire-toxicity syndrome^[42], corresponding to nerve toxicity, blood circulation toxicity and mixed toxicity, respectively. The combination of Scutellariae Radix and Phellodendri Chinensis Cortex in snake bite prescription is mainly used to clear away fire-toxicity syndrome, and can stop bleeding. In addition, the use of Knoxiae Radix aims to alleviate the invasion of toxicity by promoting the excretion of urine to release the snake venom in the body. The use of Angelicae Dahuricae Radix is aimed at wind-toxicity syndrome, and it can dispel the wind and relieve spasm, eliminate wound swelling and pain, and expel pus. Wuyishan snake medicine contain the three, indicating that the local area is prone to mixed toxicity or various types of venomous snake bites, which is consistent with the geographical factor of being wooded and conducive to the habitat of venomous snakes. The ingredients of Quanzhou snake medicine can clear away heat and

Table 1 Main snake bite preparations as traditional Chinese medicine and their components in Fujian

Snake bite preparations	Rhizoma Coptidis	Scutellariae Radix	Phellodendri Chinensis Cortex	Angelicae Dahuricae Radix	Lonicerae Japonicae Flos	Liquorice	Rhizoma Paridis	Nardina roots	Croton seeds	Knoxiae Radix	Sophorae Tonkinensis Radix	Borneol	Rhei Radix Et Rhizoma	Solanum Vine	Perfoliate Knotweed Herb	Cynanchi Paniculati Radix	Labelliae Chinensis Herba	Sophorae Tonkinensis Radix	Dioscorea bulbifera L.	Japanese Ardisia Herb	Water pepper	Radix Berberidis	Codonopsis lanceolata	Diyouzai
Fujian snake medicine																								
Sheshang Jiedu tablets		○	○																					
Xiongshan snake medicine																								○
Wuyishan snake medicine			○	○						○							○	○	○	○	○	○	○	○
Quanzhou snake medicine	○	○	○	○	○	○																		

Note: Fujian snake medicine and Quanzhou snake medicine only show public ingredients. "○" indicates that the drug is contained in the formula.

detoxify, and were mixed with *Angelicae Dahuricae Radix* (dispelling the wind and expelling pus) and liquorice. It can be seen that the probability of blood circulation toxicity was greater in the local area, and the toxicity was violent and prone to ulceration abscess. In Fujian snake medicine, croton seeds and *Knoxiae Radix* can promote the excretion of urine, and *nandina* roots and borneol can clear heat, while *Sophorae Tonkinensis Radix* can reduce swelling and expel pus, which is basically consistent with Wuyishan snake medicine prescription principles. In addition, *Rhizoma Paridis* in Fujian snake medicine, *Perfoliate Knotweed Herb* in Sheshang Jiedu tablets, *Cynanchi Paniculati Radix*, *Lobeliae Chinensis Herba*, and water pepper in Wuyishan snake medicine, and *Diyouzai* in Xiongsan snake medicine are special Chinese herbs for treating snake bites^[43].

6 Conclusions

Fujian has a long history of using Chinese herbs to treat snake bites. However, it is a pity that there is no written record of ancient folk remedies and experiences for snake bites. After the founding of the People's Republic of China, the prescriptions for snake bites were systematically collected, sorted, studied and improved by Fujian Province. By carrying out the campaign of offering prescriptions and collecting styles, and holding the experience exchange meeting of herbal and snake doctors, the snake doctors and prescriptions for snake bites in Fujian began to attract the attention of the medical circle. When the album of Chinese herbal medicine was compiled to include prescriptions for snake bites, a special collection of prescriptions for snake bites began to appear. Since the late 1950s, doctors of traditional Chinese medicine and Western medicine and snake doctors in Fujian have cooperated with each other, and devoted themselves to the study of prescriptions for snake bites. In the "Chinese Herbal Medicine Movement", hospitals in Fujian Province have incorporated snake doctors into the regular medical sequence by absorbing snake doctors and setting up snake bite specialties. At the same time, the cooperative research on prescriptions for snake bites by medical research institutes and medical institutions at all levels in Fujian made prescriptions for snake bites gradually improved into snake bite preparations as traditional Chinese medicine. Because of the convenience and reserve of snake bite preparations as TCM, the first aid time of patients suffering snake bites has been gained, and the cure rate of snake bites has been improved in Fujian Province.

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