

IV. ВУЛКАНИЗМ РАЗЛИЧНЫХ ГЕОТЕКТОНИЧЕСКИХ ОБСТАНОВОК (продолжение)

ГЕОЛОГИЧЕСКАЯ И ВЕЩЕСТВЕННАЯ ЭВОЛЮЦИЯ ВУЛКАНА УКСИЧАН В ПЛИОЦЕНЕ И ПЛЕЙСТОЦЕНЕ (СРЕДНИЙ ХРЕБТ КАМЧАТКИ)

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При петролого-геохимических исследованиях магматических объектов островодужных систем одной из наиболее актуальных задач является разработка комплексных моделей эволюции крупных и долгоживущих вулканических центров в системе «первичные магмы – дифференцированные серии пород – постмагматические процессы». В качестве объекта исследований chosen была избран вулкан Уксичан – один из наиболее крупных центров эндогенной активности вулканического пояса Среднего хребта Камчатки. Длительная геологическая история формирования вулкана (плиоцен – верхний плейстоцен – голоцен), присутствие в его строении пород различных геологических серий (умереннокалдевой, высококалдевой и шоноит-латитовой), современная гидротермальная активность, наличие орудаментов и высокая степень геологической изученности территории послужили основой для проведения здесь специальных петролого-геохимических работ.

В геологическом строении вулканического центра выделяются: 1) средний плиоцен (?) – нижнеплиоценовый вулканогаммай фудзунит ($N_1^{1-2}-N_1^3$), 2) ранний плиоцен – среднеплиоценовый стратовулкан Уксичан ($N_1^3-N_2^1$), 3) средний плиоцен – раннеплейстоценовый шитовой вулкан Уксичан ($N_2^2-Q_1$), 4) ранний плейстоцен – среднеплейстоценовый кальдера-вулкан Уксичан (Q_1-Q_2), 5) верхний плейстоцен – голоценовый (?) комплекс шитообразных моногенных вулканических построек и шитово-лазовых конусов аркадного типа (Q_2-Q_3) [Огородов и др., 1967, 1972; Стефанов, Широкий, 1980; Антанин и др., 1987; Патова и др., 1987 – фоновые материалы] (рис. 1).

По содержанию щелочей лавы вулкана Уксичан и других вулканических сооружений его территории принадлежат трем петрогеохимическим сериям: умереннокалдевой и ее магматической ветви, высококалдевой (БК) и шоноит-латитовой (ШЛ) (рис. 2). При этом лишь некоторые разновидности изоструиных пород центральной части кальдеры из диаграммы (SiO_2 – FeO^*/MgO) обнаруживают типично известково-щелочную тенденцию эволюции составов. Все другие вулканические по петрохимическим признакам принадлежат толитовому типу. Умереннокалдевый кратер имеет вулканогаммае породы фудзунита, лавы верхнеплейстоцен-голоценовых стратовулканов и аркадных построек, тогда как лавы и изоструи собственно вулкана Уксичан обладают исключительно высококалдевой спецификой.

Высококалдевые лавы и изоструиные породы постройки вулкана Уксичан, а также близкие к ним по составу широкластические образования, обладают широким спектром перагенезисов минералов: Pl, Ol, Opx, Crx, Fsp, Amph, Bt, TiMt – среди микроклинов, и Plm, Apr, Spr – среди микролитов. В умереннокалдевых вулканиках верхнеплейстоценовых и голоценовых построек района обнаружены только Pl, Ol, Crx, Opx и TiMt. Такие же перагенезисы характерны и для вулканических пород фудзунита, среди которых только дициты и ридолиты иногда содержат микроклиновы Amph. По петрографическим признакам среди пород собственно вулкана Уксичан выделяются две главные группы: 1) – обладающие порфировыми структурными породами лав и изоструи, а также Mg- и Al-BK-базальты, BK-базальты, BK-адакито-базальты, порфировые латиты, BK-адакиты, BK-адакито-дациты, трахидациты, BK-дациты; и 2) – обладающие афирмовыми и субафирмовыми структурными лавы и агнеобриты (стекловаты, изотропические) шоноитов и латитов, кварцевых латитов. К последней группе относятся и стекловатые трахидациты и трахиродациты изоструи, а также некоторые разновидности BK-базальтов.

Наряду с обычной для дифференцированных известково-щелочных и субщелочных серий тенденцией к снижению содержания TiO_2 , Al_2O_3 , FeO , MgO , CaO , Sc , Co , Ni , Cr , V и увеличению концентратов Na_2O , K_2O , Rb , Ba , Pb , Sr , B , F , Be , Zr , Nb , Ta с ростом кремниевистости пород, для серий вулкана Уксичан отмечаются особенности в поведении ряда компонентов. Так, от BK-базальтов к BK-адакитам, шоноитам и латитам наблюдается возрастание концентратов Ti и P , которые с переходом к кварцевым латитам и трахидацитам начинают резко снижаться. BK-дациты

Sibir V Panorame Tysiacheletii Materialy Mezhdunarodnogo Simpoziuma Tom 2

AW Rasmussen



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Sibir V Panorame Tysiacheletii Materialy Mezhdunarodnogo Simpoziuma Tom 2 Book Review: Unveiling the Power of Words

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